



ADP Advanced Data Processing V4.0 User's manual

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1 What is ADP?

ADP stands for...

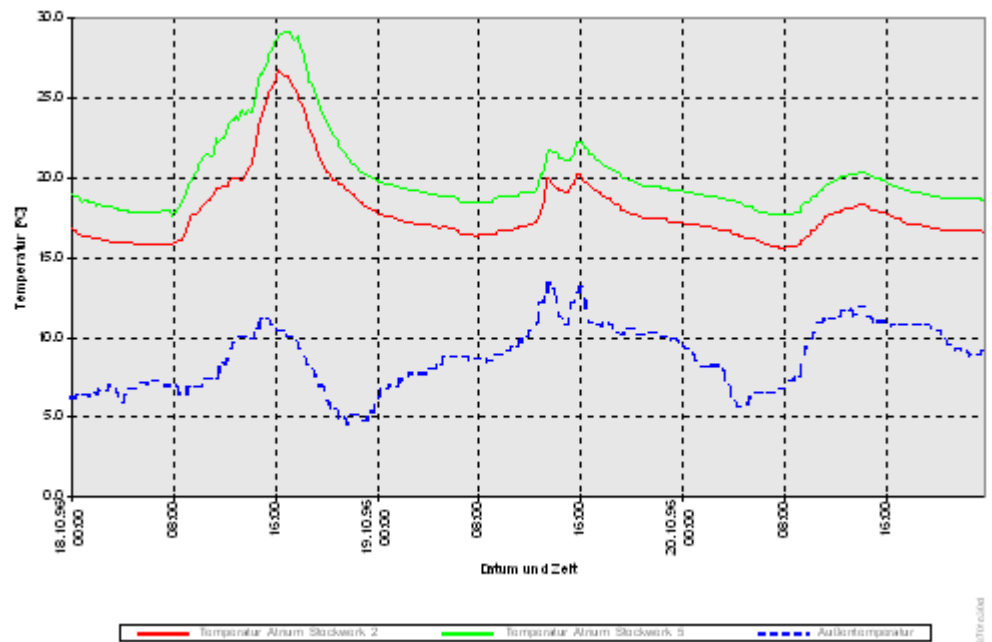
Advanced Data Processing

ADP—an data evaluation and reporting program—guarantees gap-free processing and presentation of all operating data.

High availability and optimal use of data from building automation plants is very important. To achieve this goal, ADP fulfils one basic requirement.

ADP generates meaningful reports from data which is stored in the PDM database in any combination and in selectable time spans. These reports can then be displayed and printed in various forms.

Example for a comparison of temperature curves:



8704o30: Example for an ADP report

ADP strengths

ADP as a program primarily focuses on displaying any process data in meaningful presentations.

- ADP allows you to analyze weaknesses in your operation and supervise and evaluate corresponding optimization measures. This allows for efficient and transparent building operations.
- Visualization of process data via graphical illustrations or tables as well as a combination of both.
ADP provides an integrated spreadsheet program. Additionally, you can export data to MS Excel for further editing.
- Proof of adherence to required operating states, laws on emissions, manufacturing conditions
- Long-term data evaluation. Within the framework of the ISO9000 documentation requirement, long-term, archived operating data can be retrieved at any time and processed in the form of ADP reports.
- In order to efficiently generate ADP reports, the program provides report templates.

Operating principle

ADP main functions

As shown in the illustration below, all building data required by ADP are available in the PDM database.

ADP serves to visualize this data individually or in any combination.

ADP provides two main functions:

- **Define reports**

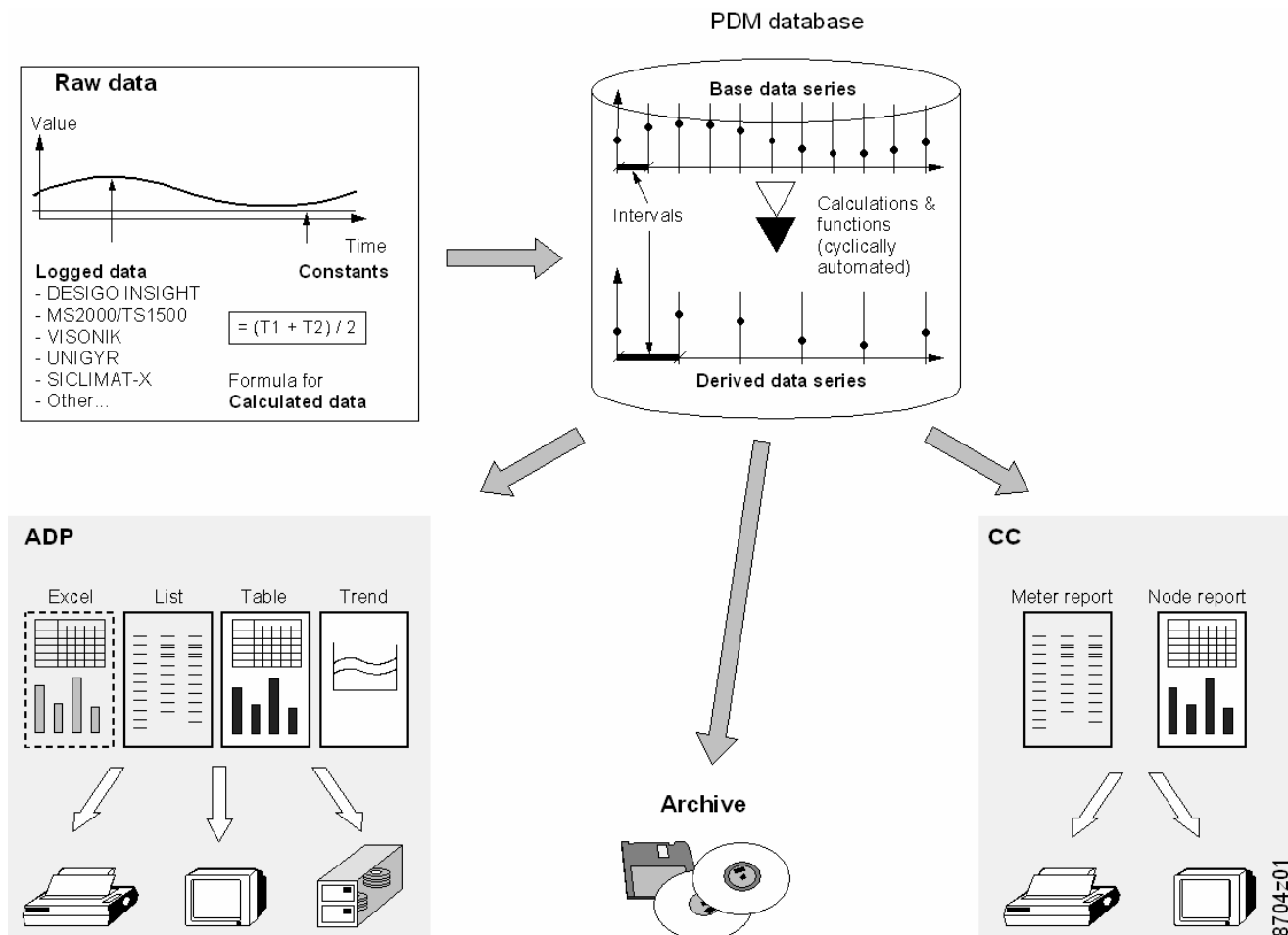
- To define the data series whose data are summarized and presented in a report for comparative purposes.
- Definition of report displays (List, Table, Excel, Trend).
- Definition of a report's time resolution.

- **Display reports**

Reports can be viewed on-screen or printed:

- manually via the corresponding command in ADP or
- automatically at predefined times

The time span, i.e., the time and date range that a report is supposed to cover, as well as the report's start time and date are freely selectable.



8704z01: Principle of operation for ADP-PDM-CC

CAFM – Computer-aided facility management

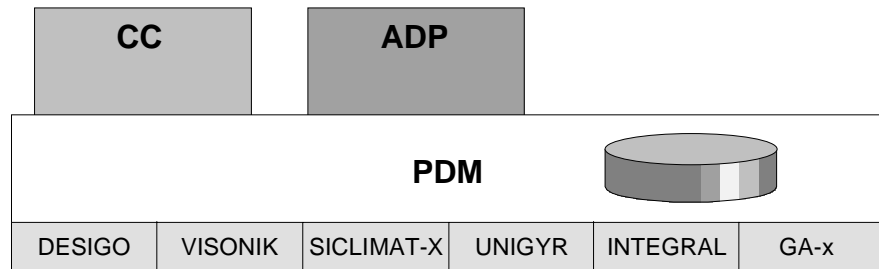
ADP is merely one building block of an entire concept

The term CAFM includes the following three components:

- Technical building management
- Administrative building management (not part of this document)
- Infrastructural building management (not part of this document)

For technical building management, Siemens Building Technologies provides the following three software packages:

- **PDM:** Includes all administrative functions for the PDM database.
- **ADP, CC:** Application programs that process and prepare saved building data according to various aspects.



8732z11

Comparing ADP and CC

ADP differs from CC (Consumption Control), designed especially for energy data:

- Because of its high flexibility in terms of data selection and display and
- because of its capability for substantially smaller resolutions for data acquisition.

CC on the other hand:

- Focuses on cost models, unit conversion, and distribution of energy on various structures as its primary features, and
- works with daily values.

2 About this document

2.1 Revision history

This document contains the following changes as compared to version ADP 3.0, dated June 2003 (CM2B8703en).

Type of change	Topic	Section number
New text	Logical data series	3; 11; Glossary; Index

2.2 Referenced documents

CAFM documentation

Document	Contents	Order number
PDM User's guide	User's guide for version 3.1-1 March 2004	CM2B8736en_01
ADP User's guide	This document: User's guide for version 3.1-1 May 2004.	CM2B8705en_01
CC User's guide	User's guide for version 2.2.x February 2000	CM2B8716en_01

VISONIK documentation

User level 4 and higher require substantial knowledge of VISONIK data processing (DP). The ADP engineering manual references all relevant documents. The table below contains the most important documents:

Document	Contents	Order number
VISONIK® DCS Functions A-Z	User's guide - Version 20	CM2U8568E
VISONIK® Point types and parameters	Documentation on basics for VISONIK point types and parameters, version 20	CM2Z8568E
VISONIK® DCS Loader Operator handbook	Loading the VISONIK DCS configurations	CM2U8373E

Database documentation

PDM uses one of several available standard databases. Refer to the supplied documentation for detailed information on this topic. In this document, we will limit ourselves to a few general comments on using the database.

Engineering manual

Available in English only.

This user's guide is intended for Siemens Building Technologies technical personnel or authorized contractors only.

It contains extensive information on the PDM and ADP engineering process, and installation and PDM program group setup.

2.3 General

Validity

This document is valid for ADP version 4.0.

Contents and target audience

This document contains all information to enable you to quickly use the *fully installed* ADP program.

Note

ADP is not available as an independent program on your installation. All ADP functions are available in the PdmExplorer. When installing ADP, the PdmExplorer is expanded by the corresponding ADP objects.

As only Siemens Building Technologies specialists are authorized to install and configure ADP, detailed information on planning, installation, setup, etc. is available in the engineering manual only.



Caution: All users with access level 2 or higher can irretrievably change or delete certain data. For this reason, we recommend that even professionals read all chapters relevant to their work *prior* to carrying out any operations.

Product errors? Missing text?

If you find errors or discover inadequate product or documentation information, please notify the Common Support of Siemens Building Technologies, Building Automation. Doing so helps us further optimize our products.

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2.4 Document structure

This user's guide combines both instructions and reference material. The structure is oriented to typical workflows for *initial setup* of ADP. The document structure thus is as follows:

Introduction	Chapter 1	What is ADP?
	Chapter 2	About this document
Basics	Chapter 3	Basics you should know
Operation	Chapter 4	Compose and start ADP reports
	Chapter 5	Compose and start jobs
	Chapter 6	ADP object properties
Display reports	Chapter 7	Mapping data series to the time period of report
	Chapter 8	Table display
	Chapter 9	Trend display
	Chapter 10	Excel display (V7.0E/8.0E)
Terms	Chapter 11	Glossary

Referenced documents To easily locate specific information, the following are available at the end of this document:

- Summary of all terms and definitions.
- Index.

2.5 Online help

You can open online help at any time and for all programs.

Context-sensitive help

Both PdmExplorer and PdmFinder support context-sensitive help, i.e., each text or field offers the corresponding help text.

Context-sensitive help is available in two ways, whereby both methods are equally valid:

Method 1



Click the desired text or field.
Press <F1> on the keyboard.

or

Right-click

Right-click the desired text or option field or right-click the name of the associated field (in some cases, PDM uses a right-click for other purposes).

Step-by-step procedure

The online help offers step-by-step instructions for certain tasks.

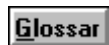
Help menu

Start Help via the *Help* menu. The startup page contains all topics with step-by-step instructions.

Help on individual topics

For topical searches, the left part of the help program contains three tabs: *Contents* (table of contents), *Index* (search by keywords) and *Search* (full text search).

Glossary



Shows all definitions of terms in alphabetical order.

Exit online help



Closes Help.

Print

You can print the active help topic by clicking [Print] in the Help toolbar.

Quick information

As soon as you click a menu or a corresponding symbol on the toolbar, the status bar at the bottom of the window provides a brief description of the associated function.

2.6 Document conventions

2.6.1 Symbols used

Caution: Loss of data



Users with access level 2 or higher may change or delete data. When you see the symbol to the left, data may be lost *irretrievably*.

Practical hints



The symbol to the left denotes information that helps you properly operate and use the programs. This information is based on experience; we strongly suggest that you observe all hints.

Important notes

Important information is printed on a gray background.

2.6.2 Typographical conventions

For button and field names as well as short descriptions of functions or repetitive processes, the following conventions apply throughout this user's guide:

Keyboard keys

Keyboard keys are always printed in angle brackets < >.

Example: <Shift>, <Shift + N>

Names for dialog boxes and fields

Names of dialog boxes and fields in Windows are *italicized*.

Example: In the *Definitions* dialog box,

Input in fields

When prompted to type in a value in a field, the following short description is used:

Example: **Type in the name of the data series in the Series field.**

Example: **Type "13" in the Series field.**

Keyboard entries are always set in quotation marks "...".

Windows buttons

Buttons are always printed in brackets [].

Example: **When you click [Cancel], the ...**

Example: **[Save].**

This is a prompt to click [Save].

Menu names and items

Names of menus and menu items are printed in SMALL CAPS.







Example: **Select NEW METER from the DIMENSIONS menu to ...**

Instructions

Individual steps of instructions to be performed in a specific order are separated by a | slash. Example: **SYSTEM | METER | Right-click | NEW METER**

This tells you to right-click the METER menu item in the SYSTEM menu. A submenu opens. Select the NEW METER menu item.

Mouse click

In the instructions, **right click**  and **double click**  are specially noted.  
Otherwise, left click  is assumed. 

Context menus

Right-click  in most cases opens the context menu.

Date and time format

The date and time settings depend on the settings of your Windows installation (Windows NT/2000 [Start > Settings > Control Panel > Regional Settings]).

"Year 2000" compliance

If year numbers are entered with just two digits, the following assignments apply:

50 – 99 = 1950 – 1999

00 – 49 = 2000 – 2049

In CC as well as in PDM DataComm and DataEdit, the following applies to the leap day (February 29) for the years 2000, 2004, 2008 and future leap years:

First set the day to 1, then select the month and year, and then set the day to 29. The system accepts this procedure, but you cannot save this date!

This procedure is required as the date is checked for plausibility when entered. The program prevents entry of invalid dates.

Important



The symbol to the left denotes important information; in addition, the text is printed on a gray background.

3 Basics you should know

PDM basics

Extensive information on the topics below are available in the PDM User's Guide (CM2B8733en) under the same chapter heading or in the online help glossary.

- **PDM database**
 - Interval, storage time, formula, time stamp, quality attribute.
- **Compression types**
 - Sampling, difference, mean, maximum, minimum, sum.
- **Data series**
 - Data point.
 - Recorded, calculated, constant and logical data series

Refresher

Data series

ADP and CC can only access data for which a data series was created.

When creating a data series, the data structure required to save the data is created in the PDM database.

A data series contains values that relate to a specific data point **AND** a defined interval, e.g., the hourly mean value of the outside temperature.

Thus: For values based on a specific data point and recorded for various time intervals (e.g. hourly and daily mean values of the outside temperature), various data series must be generated accordingly.

3.1 ADP report

ADP report.

An ADP report only comprises references to data series, but not current lists or graphics.

Report Series Name	Series Name	Type	Offset
Outside temperature	Outside tempera...	Recorded	None
Outside temperature nights only		Filter Local	
Room temperature - set point	Room temperatu...	Constant	None
Atrium temperature	Atrium temperatu...	Recorded	None
Atrium temperature - average 1	Atrium temperatu...	Calculated	None

8701o31: ADP reports – (Report) series name

Assign the data series to the ADP report you want to display on screen.

- The order of the individual entries determines the order of the columns when a report is printed.
- The same data series may appear several times, e.g., with different date ranges.
- A report may also contain data series used for internal calculations in reports only, and not displayed in ADP reports.
- If an ADP report contains data series with multiple intervals or if the intervals do not match the resolution of the ADP report, the following applies:
 - The data series values are set to the time defined in the ADP report resolution. If there are no values for the predefined time, the most recent valid value of the respective data series is displayed.
 - The following applies to Trend displays with "Resolution = None":
All values of all data series are displayed.

Symbols



Recorded, calculated, or constant report data series.

Report data series that do **not** appear in the ADP report.

Report data series

When you open an ADP report, all associated data series are displayed.

Report Series Name	Series Name	Type	Offset
Outside temperature	Outside tempera...	Recorded	None
Outside temperature nights only		Filter Local	
Room temperature - set point	Room temperatu...	Constant	None
Atrium temperature	Atrium temperatu...	Recorded	None
Atrium temperature - average 1	Atrium temperatu...	Calculated	None

8701o31: ADP reports – (Report) series name

Data series referenced in a report are called **report data series**.

Report data series have two additional, report-specific features:

- An offset, i.e., a corrective value allowing for shifting the defined time span. (To, for example, compare the "current month" to the "previous month" of a data series).
- An option to display the data series in a report or not.

ADP report template.

A report template corresponds to an ADP report whose definition is not yet complete. Contrary to the ADP report, it contains **at least one local filter entry** allowing you to easily locate a specific data series.

Report Series Name	Series Name	Type	Offset
Outside temperature	Outside tempera...	Recorded	None
Outside temperature nights only		Filter Local	

8701o31a: ADP reports – Filter entry

When you replace all filter entries of the report template by the desired data series entries, an ADP report template becomes an ADP report.

Symbol

For greater clarity, the following symbol appears when a report template is created:



Local filter entry.

|

Use

Report templates are a comfortable means to quickly create new ADP reports with similar designs. As the report template specifies the design, you only need to assign the respective data series.

3.2 Report properties

Report design

- Type of display.
- Time resolution used to display data in a report.
- Time span in days, weeks, etc. for which you intend to display data in a report.

Types of display

We provide four basic types of display to create reports, each offering specific advantages and disadvantages with regard to design.

List The data is listed in a table display. Design efforts are minimal.

Trend Allows you to display curves without spending much time on design. You can easily adjust the design to special information needs even after retrieving the report.
Hint: To quickly and easily analyze a data series, drag and drop it in the Trend window.

Table Do not use this display for new projects, as it will not be supported in the future. Use "Excel" rather than "Table".
"Table" allows for arranging values in tables and display them as desired. Use Formula One—the program supplied with ADP that resembles Excel—to create the reports.

Excel Linking a report to Microsoft Excel 7.0 (or later) is intended primarily for experts. Excel provides interesting statistical functions that can also be used, for example, to calculate correlations.

Resolution

Resolution is the time frame used to display data in an ADP report.

Example

You want a row-by-row display of hourly mean values in an ADP report. In this case, set the "Resolution" to one hour.

Application note

We recommend to select a resolution that matches the data series intervals. However, this is not mandatory. Data of data series that do not match this interval are standardized accordingly.

- The data series values are set to the time defined in the ADP report resolution. If there are no values for the predefined time, the most recent valid value of the respective data series is displayed.
- The following applies to Trend displays with "Resolution = None":
All values of all data series are displayed.

Time Span Shown

The concrete time span for which the report displays data results from the time span (or report time span), the offset,, the present report start date, and the set job properties (e.g. first weekday=Monday).

The following four options are available:

8701o32e: Time span

Example:

It is Friday, February 1999, 1600 hours, when you start a report.

If the "Number" field defines a period that extends over several days, weeks, etc., the date range is expanded by the corresponding previous days or weeks, etc.

1. Current time span

The report includes the current, not yet completed date and time range:

1-day report: **From** Friday, February 19, 00:00 **through** Friday, February 19, 23:59

1-week report: **From** Monday, February 15, 00:00 **through** Sunday February 21, 23:59

1-month report: **From** Monday, February 1, 00:00 **through** Sunday February 28, 23:59

1-year report: **From** Friday, January 1, 00:00 **through** **From** Friday, December 31, 23:59

but **always without** data after Fr 19.02., 1600 hours.

2. Completed time span

The report includes the previous, completed date and time span:

1-day report: **From** Thursday, February 18, 00:00 **through** Thursday, February 18, 23:59

1-week report: **From** Monday February 8, 00:00 **through** Sunday February 14, 23:59

1-month report: **From** Friday January 1, 00:00 **through** Sunday January 31, 23:59
 1-year report: **From** Thursday January 1, 1998, 00:00 **through** Thursday, December 31, 1998, 23:59

3. Sliding time span

The report includes the time span for one day, one week, etc. until the exact current time:

1-day report: **from** Thur 18.02., 16:00 **through** Fr 19.02. 15:59
 1-week report: **From** Friday February 12, 16:00 **through** Friday February 19, 15:59
 1-month report: **from** Thur 19.01., 16:00 **through** Fr 19.02., 15:59
 1-year report: **From** Friday February 19, 1998 16:00 **through** Friday February 19, 1999, 15:59

4. Freely selectable time range

The report includes all data between both the indicated start date and the stop date.

Offset, shifted time span

The offset represents the corrective value included in the definition of the date range applied to report data display.

This corrective value can be:

- **Relative** to the start time, e.g., Offset= -2 years.
- **Absolute** for a specific year, e.g., Offset= 1996.
 In this case, select "Reference year" as the unit.

Application example

Assumption: A data series contains monthly values for multiple years. The time span is 1 year and the resolution in the report is 1 month.

Offset: If the data series is added three times to a report, but each time with a different offset (e.g., offset = -2 years, -1 year, and 0 years), the data of this data series can be displayed in neighboring columns shifted by one year.

	A	B	C	D
10		-2 Years	-1 Year	1999
11	January	203	270	315
12	February	227	269	307
13	March	250	285	295
14	April	240	288	294

8701o33: Data series with offset (table display)

Note

- The offset entered for a data series only applies to the local report.

Unsupported offset function

- ADP does **not** support **combinations** containing an offset of months and a time span of years.

Example

Offset 1 month
 Report Table
 Resolution 1 week
 Period 1 year

Quality attribute

The quality attribute provides information on both generation and reliability of the respective value. An entry may have several quality attributes.

PDM sets the following values:

- 0** OK.
- +** Value inserted via the PDM tool "DataEdit".
- !** Value corrected via the PDM tool "DataEdit".
- i** The processed interval contained at least one bad value.
- ^** Value imported from the archive.
- n** Data gap. PDM fills in "0" to eliminate the gap.

VISONIK and DESIGO INSIGHT set the following values:

- 3** Manual entry.
- 4** Limit under/overflow.
- 5** No event.
- 6** Out of service.
- 7** No value available.
- 8** Hardware problem.

Combined QAs

Quality attributes can be combined. For example QA 5 (no event) and QA 8 (hardware problem). DataEdit displays this entry as QA "58". Note: Multi-digit QAs always represent combined QAs.

Unreliable values

The PDM database does **not** use unreliable values for internal calculations (e.g., "compress", "calculated data series") unless specified explicitly. These values are replaced by the last known good value. If no "good" value is available, "0" is used instead.

The following values are considered unreliable:

Values with quality attributes "6", "7", "8" or "n".

But not, if they occur in combination with the quality attributes:





- "i" (the processed interval contained at least one bad value).
- "!" The value was corrected via the PDM tool "DataEdit".

Note: MS2000, TS1500, and UNIGYR do not have quality attributes.








3.3 ADP objects

ADP uses the following objects. For better recognition, they are always displayed together with a symbol.

Referenced data series

 mini31	Recorded report data series: Data series referenced in an ADP report.
 mini33	Calculated report data series. Data series referenced in an ADP report.
 mini32	Constant report data series: Data series referenced in an ADP report.
 mini34	Invisible report data series: This data series is used only for internal calculations in reports and is not visible.

ADP reports

 ic_beri	ADP report.
 mini2	ADP report. Open.
 mini35	Link to ADP report (shortcut): PDM allows you to create shortcuts to reports (and data points and data series). These shortcuts are marked by a small arrow similar to Windows.
 min40	ADP report, write-protected: Access level 5 allows you to save and write-protect ADP reports. However, as soon as you copy a write-protected report, write-protection no longer applies and the standard symbols for ADP reports are again displayed.
 ic_beriVor	ADP report template: ADP reports with at least one local filter.
 ic_beriVoro	ADP report template: Open.
 mini30	Local filter: Contains preset search criteria for data series. A local filter, as opposed to a global filter, is valid only within the report template.

3.4 Programs

PdmExplorer

The PdmExplorer is the main user interface for PDM and ADP.

PdmFinder

The PdmFinder allows you to carry out targeted searches for data points, data series, and ADP reports. You can start the PdmFinder parallel to the PdmExplorer and keep it open in the background to run searches at any time.

Auto Task

The Auto Task program allows you to automate the following:

- Upload data from the database.
- Compress PDM data.
- Archive PDM data.
- Start ADP jobs (i.e., print and save ADP reports).

4 Compose and start ADP reports

Topics not covered in this chapter

The following structure applies to this chapter:

- Step-by-step instructions only.
- Refer to "ADP object properties" for detailed information on what to enter in the individual text and option fields.

Tip!



Use context-sensitive online help for your daily tasks (right-click or press F1 for the desired text or option field). The information provided is largely identical to that in "ADP object properties".

4.1 How to create an ADP report

Necessary steps

Proceed as follows to compose a report:

- 1. Step** Optional: Create a new folder.
If needed, create a new folder for storing ADP reports in the PdmExplorer.
- 2. Step** Create a new, blank ADP report in the respective folder.
- 3. Step** Assign the desired data series to the blank ADP report.
- 4. Step** Make all necessary adjustments in each report data series.

The ADP report is now defined and ready to be started either individually or as a reference in a job.

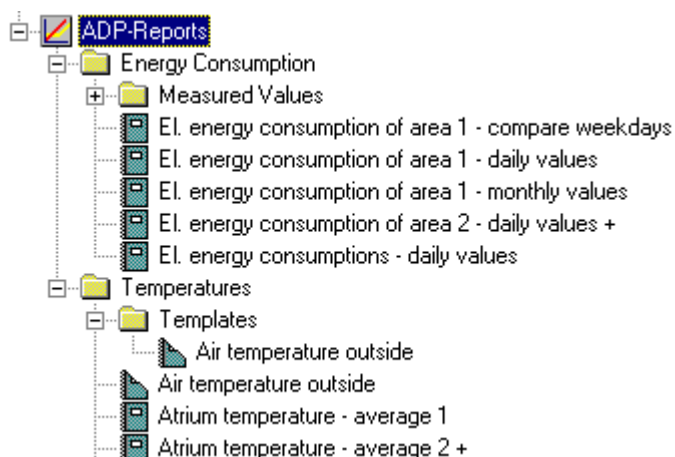
Step 1: Create a new folder.

When?

This step is optional.

In the PdmExplorer, you can create any number of subfolders in the ADP report folder to save your ADP reports.

Standard Windows NT/2000 functionality applies to creating, copying, and deleting folders and ADP reports.



8701o34: PdmExplorer (excerpt)

ADP reports comprising at least one filter entry are called ADP report templates. ADP report templates are best saved to a special folder.

Step-by-step procedure

Left part of the PdmExplorer:

1. Select the higher ADP report folder.

Right part of the PdmExplorer:

2. Right-click a blank area (not a report!).

In the context menu:

3. Click **NEW | FOLDER**.

You can now name the newly created folder.

Tip

Create a shortcut to an ADP report.

You can save the same report to several folders to, for example, best structure your report storage structure.

To this end, we recommend to not copy the associated report, but merely save a shortcut in the new folder.

Left part of the PdmExplorer:

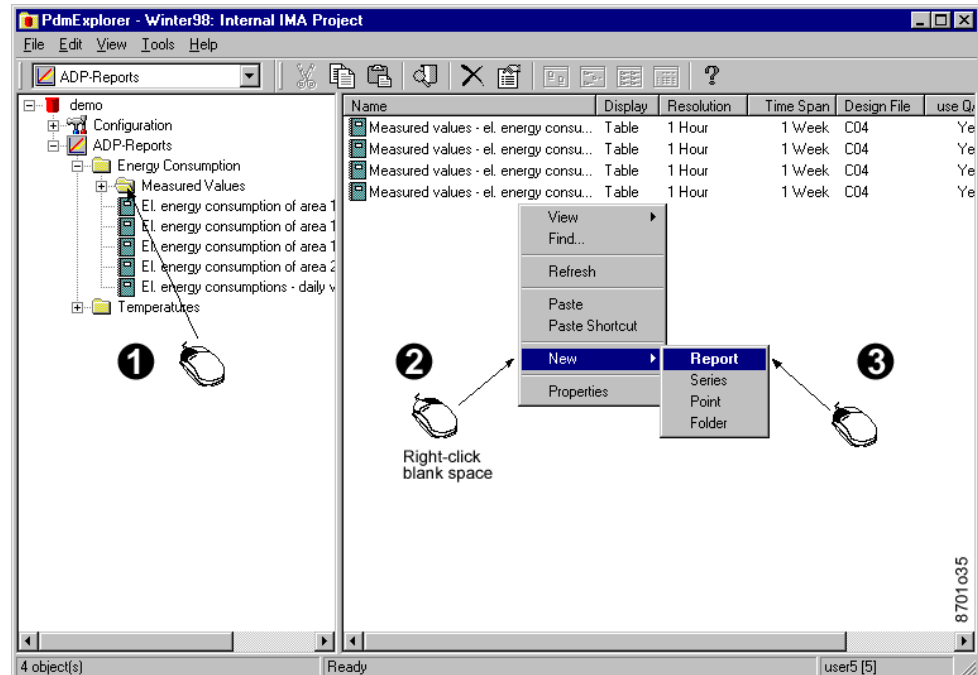
1. Open the ADP report folder.

The right portion of the Explorer displays all associated ADP reports.

Right part of the PdmExplorer:

2. **Select** the desired report, press **CTRL + SHIFT** and **drag and drop** the report to the desired ADP report folder (left portion of the PdmExplorer).

Step 2: Create an empty ADP report



8701035: Create ADP report

Step-by-step procedure

Left part of the PdmExplorer:

1. Select the desired report folder.

Right part of the PdmExplorer:

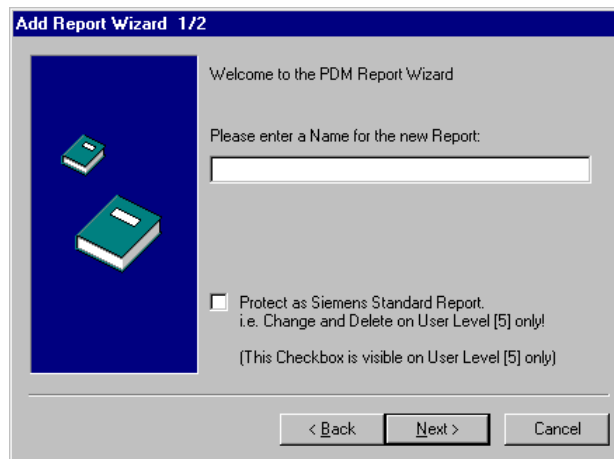
2. Right-click a blank area (not a report!).

In the context menu:

3. Click **NEW | REPORT**.
The Wizard starts.

In the Report Wizard 1/2:

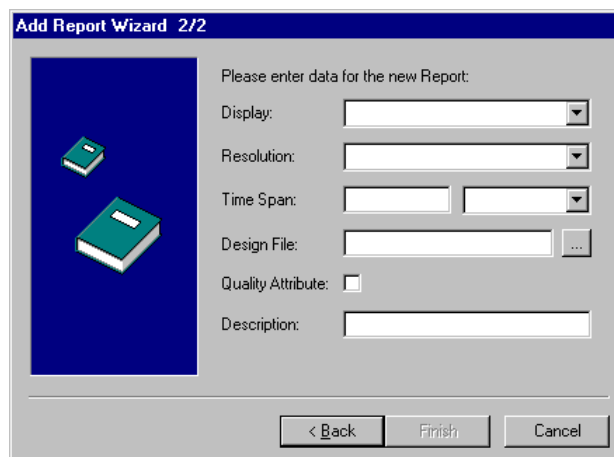
4. Specify the name of the new ADP report.



8701o36: PDM report wizard (1/2)

In the Report Wizard 2/2:

5. Define the following:
 - Display type [List, Table, Excel, Trend].
 - Resolution.
 - Time span (range for which to display data).
 - Optional: Assign the template and the quality attribute.



8701o37: PDM report wizard (2/2)

In the Report Wizard:

6. Click **[Finish]**. The program generates a new report.

Step 3: Link data series to the ADP report

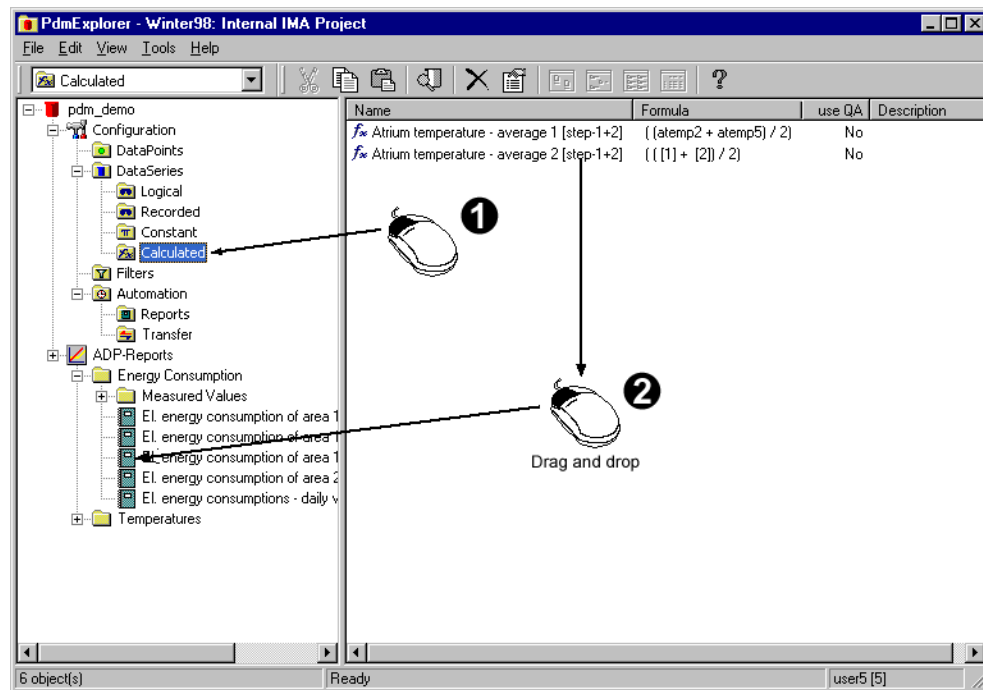
Refresher

ADP report contents

Assign the data series to the ADP report you want to display on screen.

- The order of the individual entries determines the order of the columns when a report is printed.
- The same data series may appear several times, e.g., with different date ranges.
- A report may also contain data series used for internal calculations in reports only, and not displayed in ADP reports.

A) With the aid of the PdmExplorer



8701o38: Link a data series to an ADP report (with PdmFinder)

Step-by-step procedure

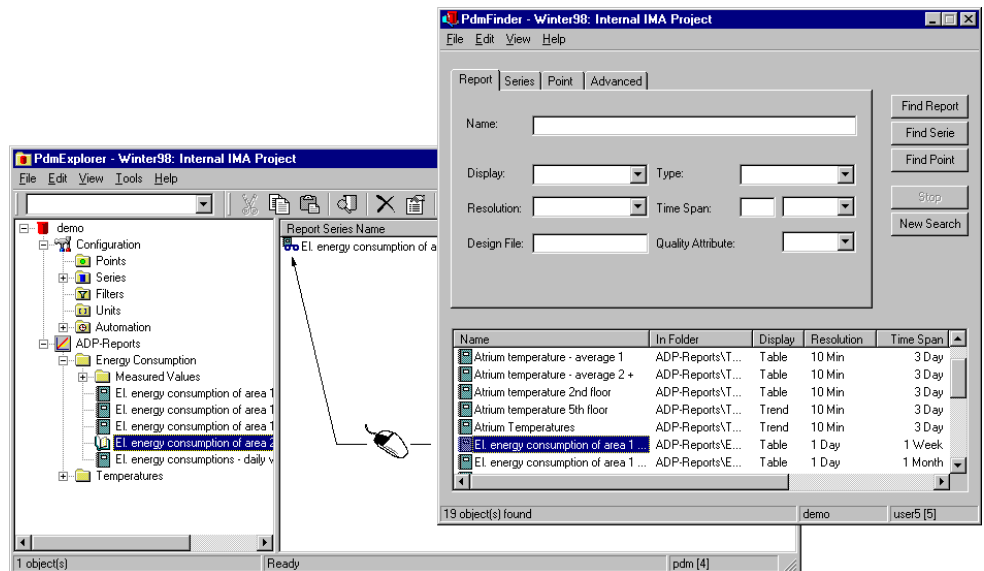
Left part of the PdmExplorer:

1. Open the desired data series [Recorded, Calculated, Constant, Logical].

Right part of the PdmExplorer:

2. Select the desired data series and **drag and drop** it in the respective ADP report (left part of PdmExplorer).

B) With the aid of the PdmFinder



8701o39: Link a data series to an ADP report (with PdmFinder)

Step-by-step procedure

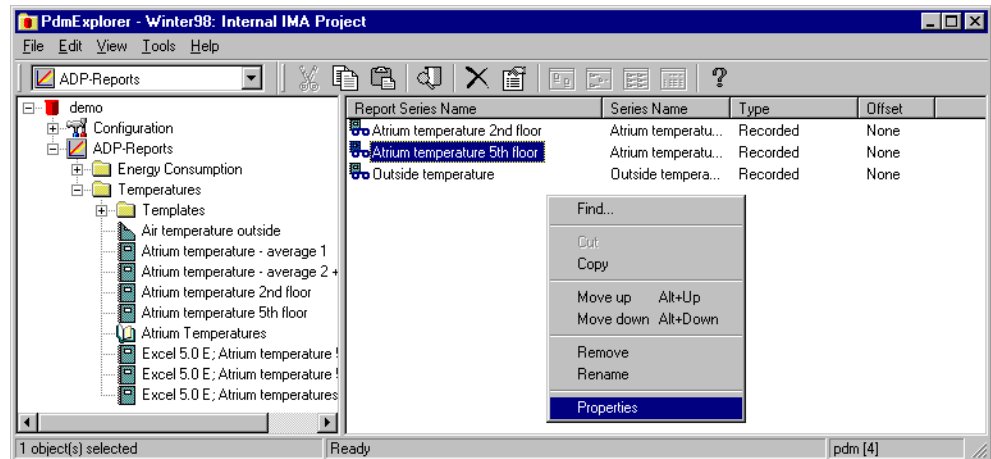
- In the PdmExplorer:
 - Open the new or the ADP report you want to change.
All corresponding report data is displayed to the right.
- In the PdmFinder:
 - Find the new data series and **drag and drop** it in the right part of the PdmExplorer.

Step 4: Report-specific adjustments

You can individually adjust each report data series in an ADP report.
This allows you to influence the way data series are displayed in a report.

Note

All adjustments apply only to the respective report. If you use the same data series in a different report, the adjustments have no influence.



8701o40: Display report data series / open properties

Step-by-step procedure

In the PdmExplorer:

1. Open the desired ADP report.
All corresponding report data is displayed to the right.

Right part of the PdmExplorer:

2. Right-click the report data series.

Change order

The order of the individual entries determines the order of the columns when a report is printed.

In the context menu:

3. Click **MOVE UP** or **MOVE DOWN**.
The active report data series is moved up or down within the list.

Change label

The name of the data series is used as the caption for report data series, e.g., column headings, to be printed or displayed on-screen.

To create short and meaningful captions, redefine the suggested data series name in the *Report Series Name* column.

In the context menu:

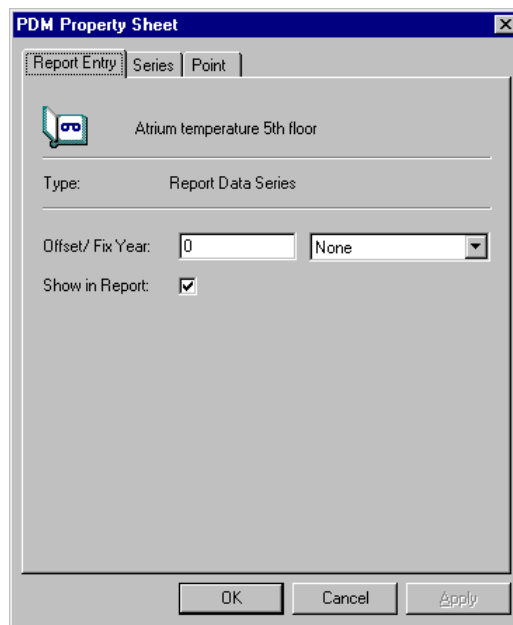
4. Click **RENAME**.
You can now rename the report series.

Note

- The name of the data series remains as is and the new name is used only as a caption in the report.
- The entry applies only to this ADP report.

In the context menu:

5. Click **PROPERTIES** in the context menu.
The following dialog box opens:



8701o41: PDM properties – *Report Entry* tab

In the *Report* tab:

6. Change the following as needed:
 - Offset [the corrective value included when defining the date range for the ADP report data display].
 - *Show in Report* checkbox (data series).

The information on the *Series* and *Point* tabs are for information only and cannot be changed.

4.2 How to create an ADP report template

An ADP report template corresponds to an ADP report whose definition is yet incomplete. Contrary to the ADP report, it contains **at least one local filter entry** allowing you to easily locate a specific data series.

Procedures for generating an ADP report and an ADP report template are largely the same. However, instead of data series, you must link at least one filter to the ADP report.

The following applies to linking a filter to an ADP report:

Step-by-step procedure

Left part of the PdmExplorer:

1. Open the Filter folder.

Right part of the PdmExplorer:

2. Select the desired filter and drag and drop it in the respective ADP report (left part of PdmExplorer).

Filter

Refresher

A filter comprises preset search criteria to find data series, data points, or ADP reports.

Global filters

Global filters are created with the help of PdmFinder and saved automatically in the PdmExplorer Filter folder.

Refer to the "PDM user's guide" for detailed instructions on creating global filters.

Local filters:

Filter entries in an ADP report template are local filters. Local filters are created by copying global filters to a report template.

Local filters are valid only within the corresponding report template. Modifying a local filter does not influence global filters.

4.3 How to create an ADP report from a report template

To do this, replace all local filters by the respective data series in the report template.

Step-by-step procedure

Left part of the PdmExplorer:

1. Open the desired report template.
All associated data series and local filters are displayed to the right.

Right part of the PdmExplorer:

2. **Right-click** Local Filter.
The PdmExplorer opens the context menu for the local filter.

In the context menu:

3. Click **ASSIGN**.
The PdmExplorer starts the PdmFinder. The local filter settings are automatically transferred to the PdmFinder.

In the PdmFinder:

4. **[FIND REPORT]**.
The PdmFinder finds all data series that match the search criteria of the local filter.

In the PdmFinder:

5. Drag and drop the desired data series from the PdmFinder to the report template.

Right part of the PdmExplorer:

6. Manually **delete** the local filter.
Delete all local filters after all data series have been found.
This converts a report template to an ADP report.

4.4 How to start an ADP report?

There are three methods:

Method A:

- Free selection of the display type and the time span. This overrides default values.

Method B:

- Direct start using predefined values.
 - Method B1: Double-click the ADP report.
 - Method B2: Use the context menu.
 - Method B3: Double-click the desktop shortcut.

Method C:

- Automatic start via Auto Task.

Method A

Step-by-step procedure

Free selection of the display type and the time span. This overrides default values.

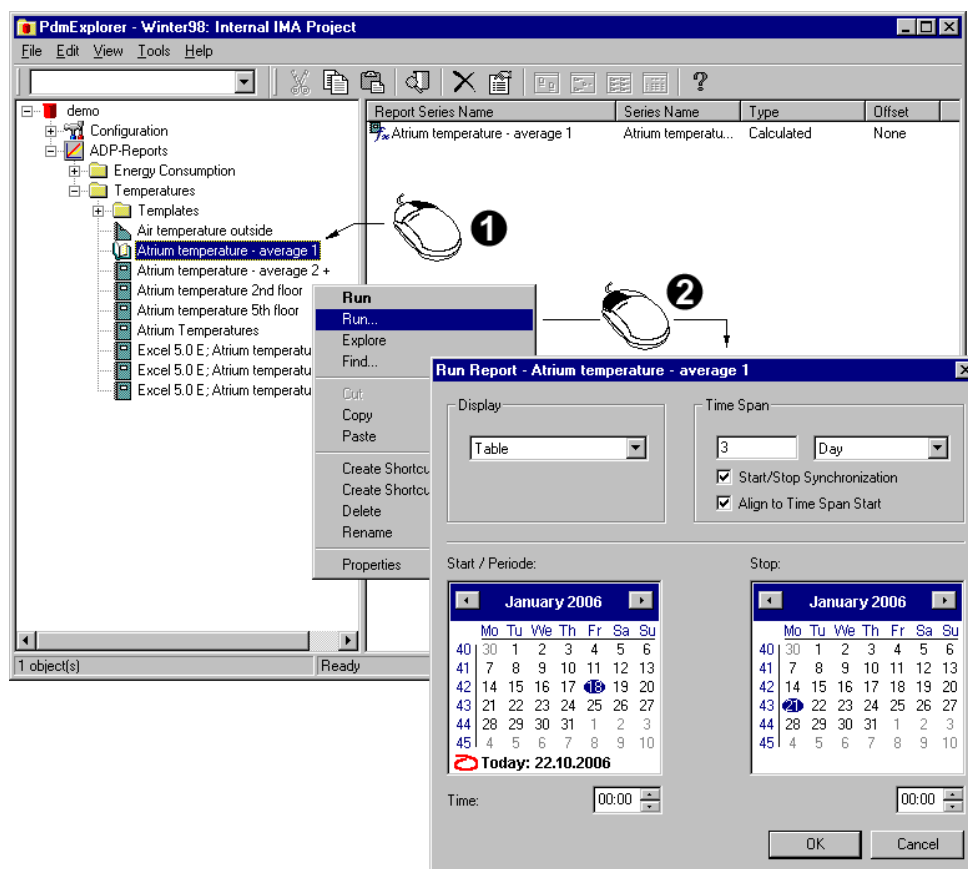
Left part of the PdmExplorer:

1. Right-click the desired ADP report.

In the context menu:

2. Click **RUN**.

The program opens the calendar.



8701o42: Start ADP report

In the calendar:

3. Change the preset values.

If needed, change the values for the display type and the time span.

These changes only apply to an immediate report display, and do not impact predefined values.

In the calendar:

3. Click **[OK]**.
The desired ADP report is displayed on-screen

Tip!



Start several reports at the same time

When you open the left part of the PdmExplorer instead of an ADP report in the report folder, the right part lists all associated ADP reports. This list allows you to select **multiple** ADP reports and start them via "Run".

Method B1

Step-by-step procedure

Direct start via double-click.

Left part of the PdmExplorer:

1. **Double-click** the desired ADP report.

Method B2

Step-by-step procedure

Direct start with predefined values via the context menu.

Left part of the PdmExplorer:

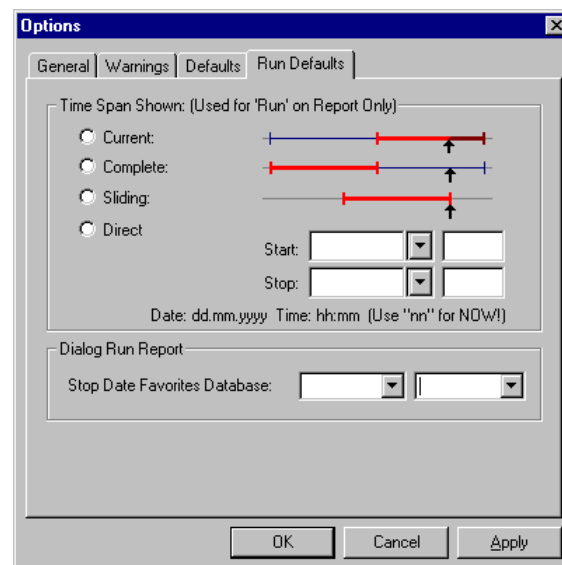
1. Right-click the desired ADP report.

In the context menu:

2. Click **RUN**.

The program immediately starts the ADP report and includes all predefined settings for the time span set via:

- **TOOLS | OPTIONS | RUN DEFAULTS** tab.



8701o43: Options – Run Default tab

Note

Reports started via the context menu RUN, RUN, or via double-click, or via the desktop shortcut, are always displayed on-screen.

Method B3

Step-by-step procedure

Direct start with predefined values via the desktop shortcut.

Left part of the PdmExplorer:

1. Right-click the desired ADP report.

In the context menu:

2. Click **CREATE SHORTCUT ON DESKTOP** in the context menu.

Windows now creates a shortcut on the desktop pointing to the ADP report.

On the desktop:

3. Double-click the shortcut.



The program immediately starts the ADP report and includes all predefined settings for the time span set via:

- **TOOLS | OPTIONS | RUN DEFAULTS** tab.

Note

Reports started via the context menu RUN, RUN, or via double-click, or via the desktop shortcut, are always displayed on-screen.

Method C

Step-by-step procedure

Automatic start via Auto Task.

For this type of start, add the corresponding **ADP report** to the *Auto Task* list.

Left part of the PdmExplorer:

1. Right-click the desired ADP report.

In the context menu:

2. Click **CREATE SHORTCUT ON DESKTOP**.

Windows now creates a shortcut on the desktop pointing to the ADP report.

On the desktop:

3. **Right-click** the shortcut.

Windows opens the shortcut's context menu.

In the context menu:

4. Click **PROPERTIES | SHORTCUT** tab.

In the Properties dialog box, *Shortcut* tab:

5. **Copy (CTRL C)**

To do this, select the **whole** contents of the *Target* field.

In the PdmExplorer:

6. Menu **Tools | AUTOTASK**.

PDM starts AutoTask.

In AutoTask:

7. Menu **TASKS | ADD**.

AutoTask opens the *New Task* dialog box.

In the *New Task* dialog box, *Command Line* field:

8. Paste (CTRL V).

Copies the clipboard contents or the *Target* field content to the *Command Line* field.

Important:

At the end of the "Command Line" field, insert a space followed by **-ma**.

Example:

```
C:\PDM-ADP\ADP32\PdmRunnerClient.exe -S:"YÎZV" -U:"dÄÄ" -P:"sjv" -  
J:"HÍ>át“{ÈUÄÄÜh‘7û^ *ã0v”;â`Ö_ÆS°è?íx;ü^^ŽzÎQÛd½;âf·Q¼Cþw; &ý" -  
TS:"2" -ma
```

In the *New Task* dialog box:

9. [Schedule...].

AutoTask opens the *Task Schedule* dialog box.

In the *Task Schedule* dialog box:

10. Program the task's trigger time.

Note

Execute ADP reports only **after** data loading has been started. ADP report execution is delayed automatically until data loading is complete. Delays occur only if **"-ma"** was added to the "Command Line".

Auto Task

All automated processes are started via **Auto Task**.

Refer to the "PDM user's guide", CM28733en, for a description of *Auto Task*.

5 Compose and start jobs

Topics not covered in this chapter

The following structure applies to this chapter:

- Step-by-step instructions only.
- Refer to "ADP object properties" for detailed information on what to enter in the individual text and option fields.

Tip!

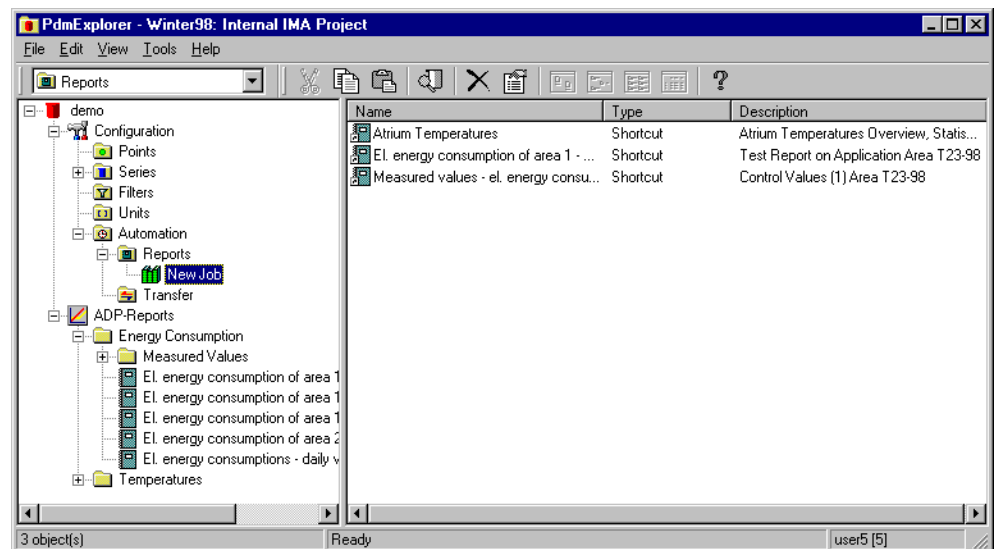


Use context-sensitive online help for your daily tasks (right-click or press F1 for the desired text or option field). The information provided is largely identical to that in "ADP object properties".

5.1 What is a job?

A job contains one or several ADP reports and can be started as follows:

- Manually.
- **Automatically** via Auto Task.



8701o45: PdmExplorer – Overview

Note



- The job only contains shortcuts to ADP reports. The actual ADP reports are saved in the ADP report folder.
- Jobs are always saved in the PDM folder **CONFIGURATION | AUTOMATION | REPORTS**.

5.2 How to compose a job

Step 1: Create a blank job

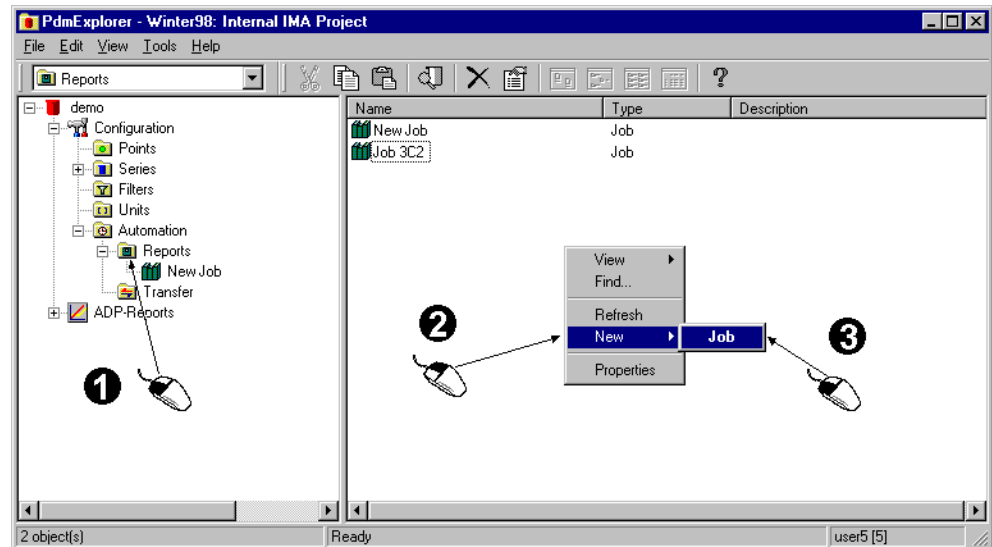
When?

This step is optional.

You can create any number of jobs as needed in the PdmExplorer folder

CONFIGURATION | AUTOMATION | REPORTS.

Standard Windows NT/2000 functionality applies to creating and deleting jobs.



8701o46: Create a new job

Step-by-step procedure

Left part of the PdmExplorer:

1. Select the **CONFIGURATION | AUTOMATION | REPORTS** folder.

Right part of the PdmExplorer:

2. Right-click a blank area (not the job!).

In the context menu:

3. Click **NEW | JOB**.

The program creates a new job and allows you to assign a new name as per standard Windows procedures.

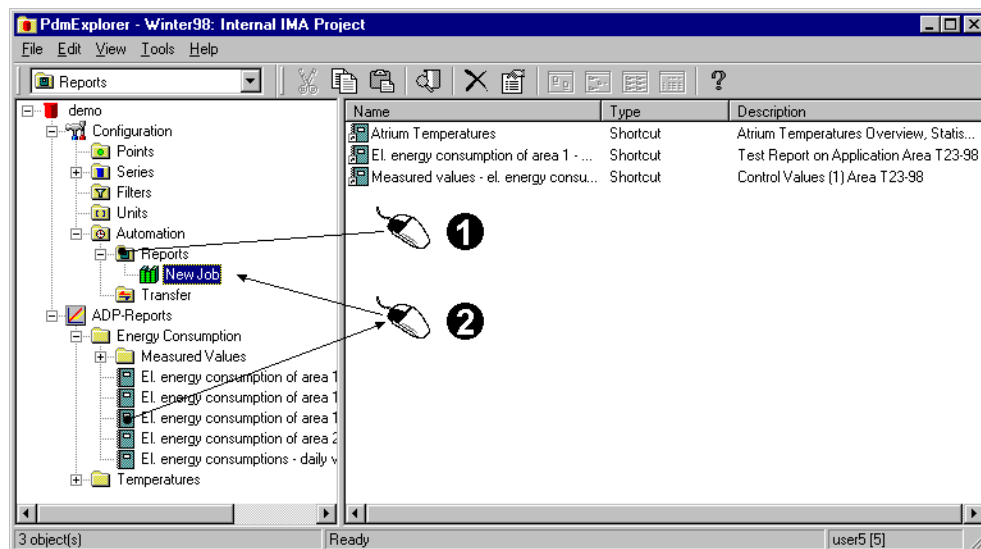
Step 2: Link ADP reports to a job

Refresher

Job.

- A job contains one or several ADP reports executed either by manual selection or automatically via Auto Task.
- The job properties dialog box allows you to specify if the associated ADP reports are to be displayed on-screen, printed, or saved to file.
- The job only contains shortcuts to ADP reports. The actual ADP reports are saved in the ADP report folder.

A) With the aid of the PdmExplorer

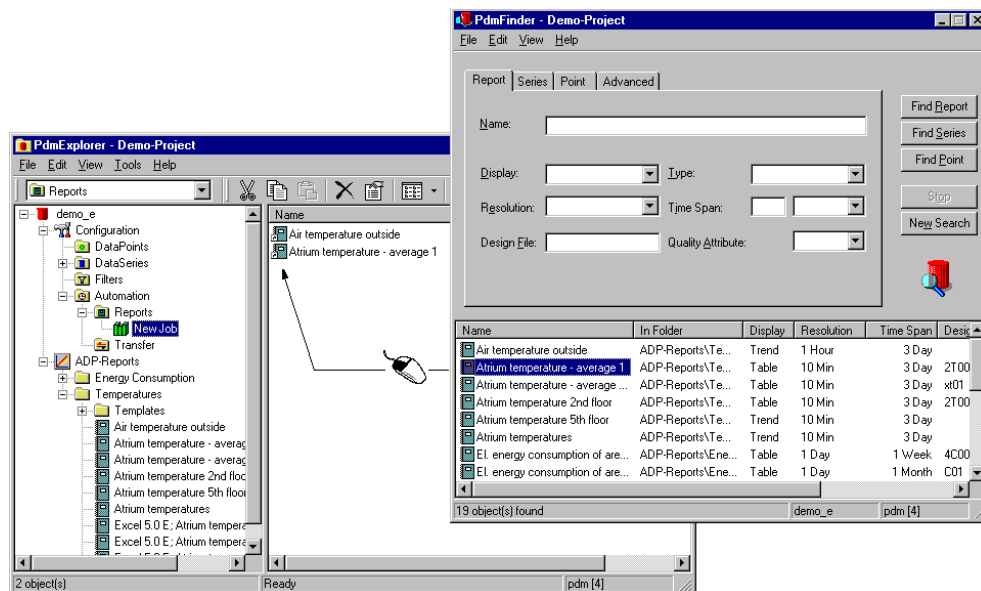


8701o47: Link ADP reports to jobs (PdmExplorer)

Step-by-step procedure

- Left part of the PdmExplorer:
1. Open the **CONFIGURATION | AUTOMATION | REPORTS** folder.
- Left part of the PdmExplorer:
2. Select the desired ADP report and drag and drop it on the respective job.

B) With the aid of the PdmFinder



8701o48: Link ADP reports to jobs (PdmFinder)

Step-by-step procedure

- Left part of the PdmExplorer:
1. Open the **CONFIGURATION | AUTOMATION | REPORTS** folder.
- In the PdmFinder:
2. Find the desired ADP report and drag and drop it in the respective job (left part of the PdmExplorer).

Step 3: Job-specific adjustments

You can adjust each individual job.

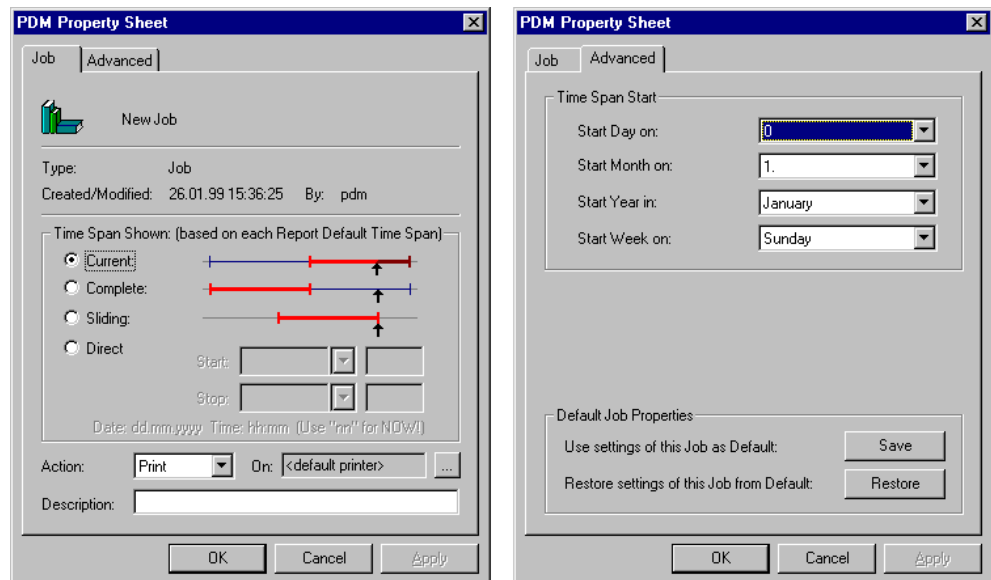
Step-by-step procedure

1. Right-click the desired job.

In the context menu:

2. Click **PROPERTIES**.

The program opens the following dialog box:



8701o49: PDM – Job properties

In the *Job* tab:

3. Change the following as needed:
 - Time span for which you to display data in the report.
 - Output medium [Printer, Screen, File].

In the *Advanced* tab:

4. Change the following as needed:
 - Initial conditions for the start time of day, month, year, and week.

Default settings

Click [OK] to save the values of both tabs as "default settings".

Note: The "default settings" apply only to jobs and not to manual ADP reports. There is no relationship to the values set via Tools | Options | *Run Default* tab.

Step 4: Report-specific adjustments

You can adjust each individual report within a job.

Caution!

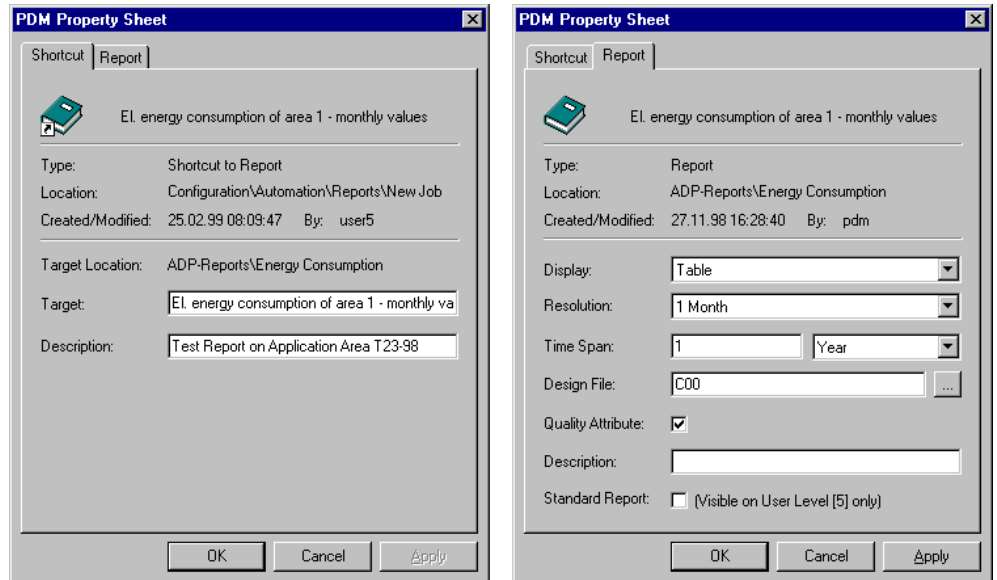
The job only contains shortcuts to ADP reports. The actual ADP reports are saved in the ADP report folder.

Changes to report shortcuts are not saved to a local copy but directly to the original ADP report.

This is meaningful, but, at the same time, differs from Windows conventions. A specific message on changes reminds you of this difference.

Step-by-step procedure

- In the PdmExplorer:
1. Open the desired job.
All associated ADP reports are displayed to the right.
- Right part of the PdmExplorer:
2. Right-click the desired ADP report
- In the context menu:
3. Click **PROPERTIES**.
- The PdmExplorer opens the following dialog box:



8701o50: PDM – Report properties

- In the *Shortcut* tab:
4. Change the following as needed:
 - Shortcut to the ADP report.
- In the *Report* tab:
5. Change the following as needed:
 - Display type [List, Table, Excel, Trend].
 - Time span [range for which you want to display data].
 - Resolution.
 - Template assignment.

5.3 How to start a job

There are three methods:

Method A:

- Free selection of the display type and the time span. This overrides default values.

Method B:

- Direct start using predefined values.
 - Method B1: Double-click a job.
 - Method B2: Use the context menu.
 - Method B3: Double-click the desktop shortcut.

Method C:

- Automatic start via Auto Task.

Method A

Step-by-step procedure

Free selection of the display type, the time span and the output medium. This overrides default values.

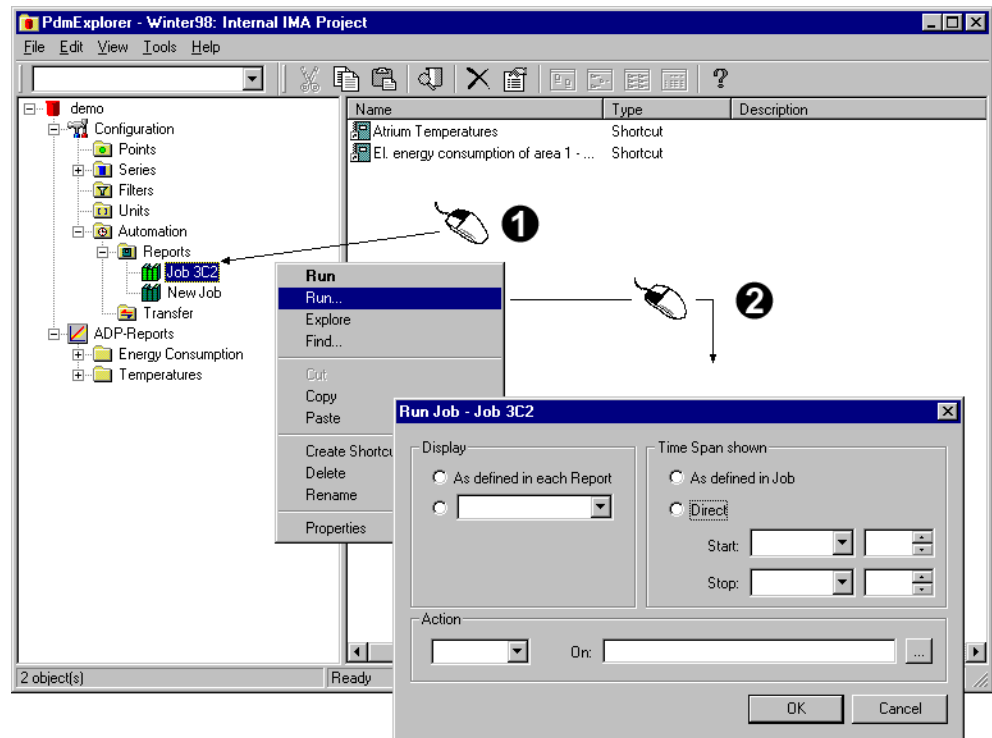
Left part of the PdmExplorer:

1. Right-click the desired job.

In the context menu:

3. Click **RUN**.

The program opens the *Run Job* window.



8701o51: Start job – Method A

In the *Run Job* dialog box:

3. Change the following as needed:
 - Display type [List, Table, Excel, Trend].
 - Time span [range for which you want to display data].
 - Output medium [Printer, Screen, File].
- Changed information applies to all reports of this job.

In the *Run Job* dialog box: 4. **[OK]**.

All ADP reports specified in the job are either saved, printed, or displayed on-screen.

Method B1

Step-by-step procedure

Direct start via double-click.

Left part of the PdmExplorer:

1. **Double-click** the desired job.

Method B2

Step-by-step procedure

Direct start with predefined values via the context menu.

Left part of the PdmExplorer:

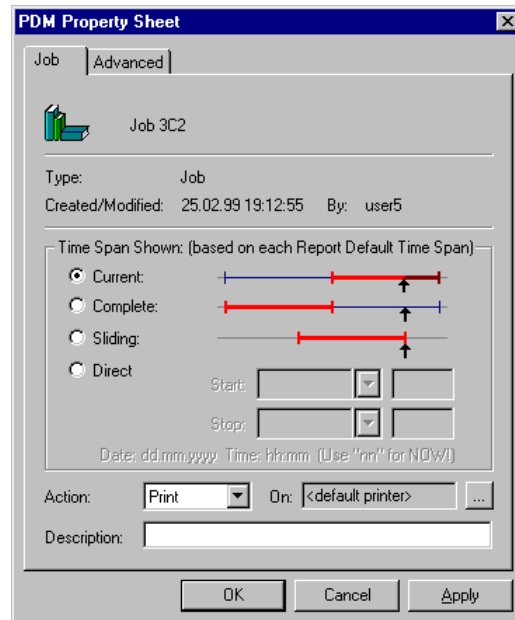
1. Right-click the desired job.

In the context menu:

2. Click **RUN**.

The program immediately starts the job and includes all predefined settings with regard to display, time span, and output medium under

- Context menu: **PROPERTIES** | **JOB** and **ADVANCED** tabs.



8701o52: Start job – Method B2

Method B3

Step-by-step procedure

Direct start with predefined values via the desktop shortcut.

Left part of the PdmExplorer:

1. Right-click the desired job.

In the context menu:

2. Click **CREATE SHORTCUT ON DESKTOP**.

Windows now creates a shortcut on the desktop for the associated job.

On the desktop:

3. Double-click the shortcut.



8701o53en

The program immediately starts the job and includes all predefined settings with regard to display, time span, and output medium under

- Context menu: **PROPERTIES** | **JOB** and **ADVANCED** tabs.

Method C

Step-by-step procedure

Automatic start via Auto Task.

For this type of start, add the corresponding **job** to the *Auto Task* list.

Left part of the PdmExplorer:

1. Right-click the desired job.

In the context menu:

2. Click **CREATE SHORTCUT ON DESKTOP**.

Windows now creates a shortcut on the desktop for the associated job.

On the desktop:

3. **Right-click** the shortcut.

Windows opens the shortcut's context menu.

In the context menu:

4. Click **PROPERTIES | SHORTCUT** tab.

In the Properties dialog box, *Shortcut* tab:

5. **Copy (CTRL C)**

To do this, select the **whole** contents of the *Target* field.

In the PdmExplorer:

6. Menu **Tools | AUTOTASK**.

PDM starts AutoTask.

In AutoTask:

7. Menu **TASKS | ADD**.

AutoTask opens the *New Task* dialog box.

In the *New Task* dialog box, *Command Line* field:

8. **Paste (CTRL V)**.

Copies the clipboard contents or the *Target* field content to the *Command Line* field.

Important:

At the end of the "Command Line" field, insert a space followed by **-ma**.

Example:

```
C:\PDM-ADP\ADP32\PdmRunnerClient.exe -S:"YÍZV" -U:"dÄÄ" -P:"sjv" -  
J:"HÍ>át"{'ÈUÄAÜh'7û^ *ã0v";â`Ö_ÆS°è?íxjü^^ŽzÎQÛd½;âf.Q¼Cþwî&ý" -  
TS:"2" -ma
```

In the *New Task* dialog box:

9. **[Schedule...]**.

AutoTask opens the *Task Schedule* dialog box.

In the *Task Schedule* dialog box:

10. **Program the task's trigger time.**

Note

Execute jobs only **after** data is being loading. Job execution is delayed automatically until data loading is finished. Delays occur only if **"-ma"** was added to the "Command Line".

Auto Task

All automated processes are started via **Auto Task**.

Refer to the "PDM user's guide", CM28733en, for a description of *Auto Task*.

6 ADP object properties

Use online help

For your daily tasks, use the context-sensitive online help.

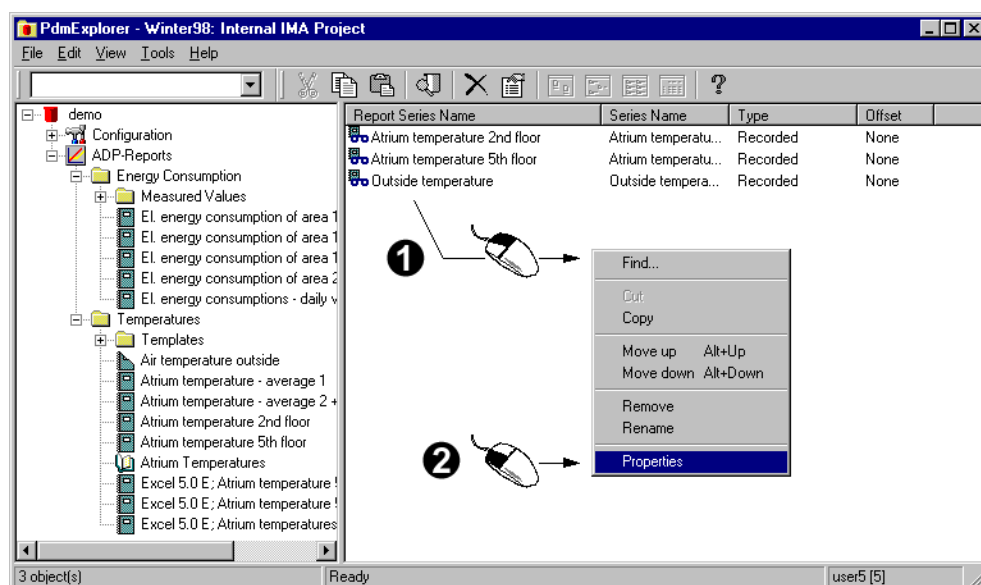
(Right-click or press F1 on the desired text or option field).

The online help information largely matches the information provided in this chapter.

6.1 How to find the properties

The following applies to **all** ADP objects:

- Point to the desired object and right-click to open the context menu.
- On the context menu, select **PROPERTIES**.



8701o54: ADP object properties

Remarks

Access to context menu functions depends on the PDM user permissions.

6.2 ADP reports properties

Refresher


An ADP report only contains data series **references**. It does not contain current data, lists, or graphics.

- Assign the data series to the ADP report in the order in which you want to display them on-screen.
- The same data series can appear several times in an ADP report, e.g., with different date ranges.
- A report may also contain data series used for internal calculations in reports only, and not displayed in ADP reports.

The data series values are retrieved directly from the PDM database each time you retrieve an ADP report.

6.2.1 ADP report tab

The text fields correspond to those of the "Report Wizard 2/2".



8701o55: ADP object properties

Header data

Name, path, creation date, and ADP report creator.

Types of display

We provide four basic types of display to create reports, each offering specific design properties.

List The data is listed in a table display. Design efforts are minimal.

Trend Allows for quick and simple display of curves as y-t display. Zooming and x-axis settings using the mouse (scaling and excerpt) are ideal for quick analysis. Hint: To quickly and easily analyze a data series, drag and drop it in the Trend window.

Table Do not use this display for new projects, as it will not be supported in the future. Use "Excel" rather than "Table". "Table" allows for arranging values in tables and display them as desired. Use Formula One—the program supplied with ADP that resembles Excel—to create the reports.

Excel Linking a report to Microsoft Excel 7.0 (or later) is intended primarily for experts. Excel provides interesting revision functions such as statistical functions that can also be used, for example, to calculate correlations.

Resolution

Resolution is the time frame used to display data in an ADP report.

Example:

You want a row-by-row display of hourly mean values in an ADP report. In this case, set the "Resolution" to one hour.

Period

Time span (or report time span) stands for a period of time in days, weeks, etc. for which you want to display data in a report.

The report period thus only indicates if the report is a daily, weekly, monthly, or yearly report, e.g., 3 weeks.

Design file

Predefined design settings for an ADP report (Trend properties, F1 template or Excel macro).

Quality attribute Selection to indicate whether the calculated values are to be displayed with or without the resulting quality attribute.



Checkbox **not selected**:

The ADP report displays only data series values.



Checkbox **selected**:

The ADP report displays both data series values and quality attributes.

The quality attribute provides information on both generation and reliability of the respective value. An entry may have several quality attributes.

PDM sets the following values:

0	OK.
+	Value inserted via the PDM tool "DataEdit".
!	Value corrected via the PDM tool "DataEdit".
i	The processed interval contained at least one bad value.
^	Value imported from the archive.
n	Data gap. PDM fills in "0" to eliminate the gap.

VISONIK and DESIGO INSIGHT set the following values:

3	Manual entry.
4	Limit under/overflow.
5	No event.
6	Out of service.
7	No value available.
8	Hardware problem.

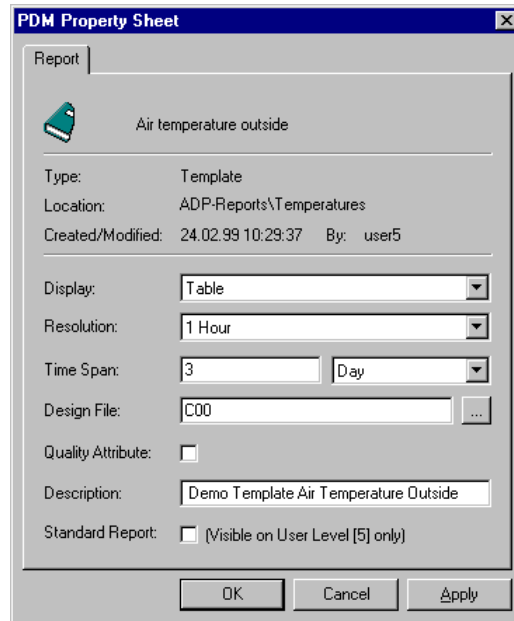
Description.

This text field allows you to individually document the ADP report that your are editing.

6.3 ADP report template properties

Refresher

A report template corresponds to an ADP report whose definition is not yet complete. Contrary to the ADP report, it contains **at least one local filter entry** allowing you to easily locate a specific data series.



8701o56: ADP report template for a table

Header data

Name, path, creation date, and author of most recent change.

Layout

Graphical display of the report [List, Table, Excel, Trend].

Resolution

Time resolution used to display the data in a report, e.g., one value per hour.

Period

Time span (number and unit) used to display data in a report, e.g., 3 weeks.

Design file

Predefined design settings for an ADP report.

Quality attribute

Specify whether a quality attribute is to be displayed in the report: [Yes, No].

Description.

This text field allows you to document the ADP report template that your are editing.

6.4 Report data series properties

Refresher

A report data series is a data series that is linked to an ADP report. Report data series differ from normal data series through the additional *Offset* and *Show in Report* features.

6.4.1 Report tab

You can individually adjust each report data series in an ADP report. All adjustments are valid **only** for the associated report.

8701o57: PDM properties – Report Entry tab

Header data

Name of the report data series.

Offset

The offset represents the corrective value included in the definition of the date range applied to report data display.

This corrective value can be:

- **Relative** to the start time, e.g., Offset= -2 years.
- **Absolute** for a specific year, e.g., Offset= 1996.
In this case, select "Reference year" as the unit.

Validity: The offset entered for a data series only applies to the local report.

Application example

Assumption: A data series contains monthly values for multiple years. The time span is 1 year and the resolution in the report is 1 month.

Offset: If the data series is added three times to a report, but each time with a different offset (e.g., offset = -2 years, -1 year, and 0 years), the data of this data series can be displayed in neighboring columns shifted by one year.

	A	B	C	D
10		-2 Years	-1 Year	1999
11	January	203	270	315
12	February	227	269	307
13	March	250	285	295
14	April	240	288	294

8701o33: Offset – Example for a data series

Report display

You can suppress the report data series when you output the ADP report. This may be meaningful, for example, when a data series is referenced only by a formula.

Validity: Suppression of the data series applies only to the associated report.

6.4.2 Series and Point tabs

The information on the *Series* and *Point* tabs are for information only and cannot be changed.

6.5 Local filter properties

Refresher

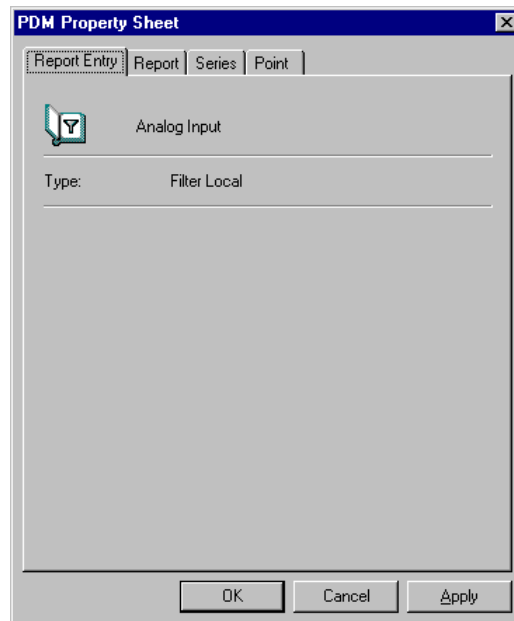
A filter comprises preset search criteria to find data series, data points, or ADP reports.

Local filters

Filter entries in an ADP report template are local filters. Local filters are created by copying global filters to a report template.

Local filters are valid only within the corresponding report template. When you modify a local filter, global filters are not impacted.

6.5.1 Report Entry tab



8701o58: Local filter properties – Report Entry tab

Header data

Name and type of the local filter.

6.5.2 Report tab

The screenshot shows a 'PDM Property Sheet' dialog box with the 'Report' tab selected. The fields are as follows:

- Name: Text input field
- Display: Dropdown menu
- Type: Dropdown menu
- Resolution: Dropdown menu
- Time Span: Text input field and a dropdown menu
- Design File: Text input field
- Quality Attribute: Dropdown menu

Buttons at the bottom: OK, Cancel, Apply.

8701o59: Local filter properties – Report tab

Search mask for ADP reports

Name	ADP report name, including the wildcards "*" and "?".
Layout	Graphical display of the report [List, Table, Excel, Trend].
Type.	ADP report or ADP report template.
Resolution	Time resolution used to display the data in a report, e.g., one value per hour.
Period	Time span (number and unit) used to display data in a report, e.g., 3 weeks.
Design file	Predefined design settings for an ADP report.
Quality attribute	Specify whether a quality attribute is to be set in the report: [Yes, No].

6.5.3 Series tab

The screenshot shows a 'PDM Property Sheet' dialog box with the 'Series' tab selected. The dialog contains the following fields and controls:

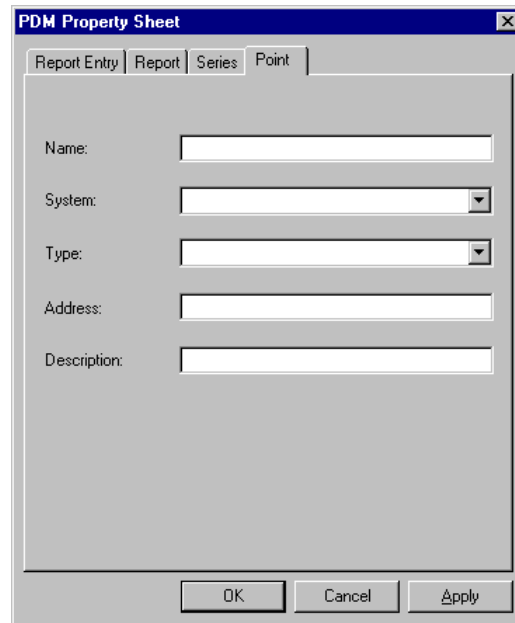
- Name:** A text input field.
- Type:** A dropdown menu.
- Function:** A dropdown menu.
- Interval:** A dropdown menu.
- Parameter:** A dropdown menu.
- Unit:** A text input field.
- Storage (Days):** A text input field.
- Buttons:** OK, Cancel, and Apply buttons at the bottom right.

8701o60: Local filter properties – Series tab

Search mask for data series

Name	Data series name, including the wildcards "*" and "?".
Type.	Data series type: [Recorded, Calculated, Constant, Logical].
Compression function	Type of data compression: [No compression, Mean, Minimum, Maximum, Sampling, Difference, Sum].
Interval	Interval at which a compressed value has been calculated and saved in the database, e.g., 1 hour.
Parameters	Point parameter whose value is saved in the data series.
Unit.	Physical unit of the point parameter.
Storage time	Number of days over which data of a data series is saved in the PDM database.

6.5.4 *Point* tab



The screenshot shows a 'PDM Property Sheet' window with a tabbed interface. The 'Point' tab is selected, displaying five input fields: 'Name', 'System', 'Type', 'Address', and 'Description'. The 'System' and 'Type' fields are dropdown menus. At the bottom of the window are three buttons: 'OK', 'Cancel', and 'Apply'.

8701o61: Local filter properties – *Point* tab

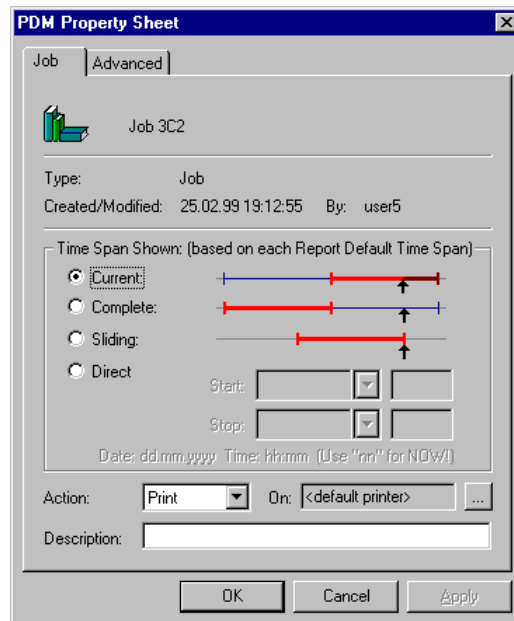
Search mask for data points

Name	Data point name, including the wildcards "*" and "?".
System	System responsible for acquiring the data point: [DESIGO INSIGHT, external, MS2000/TS1500, UNIGYR, VISONIK].
Configuration type	Data point configuration type according to the selected system.
Address	Address used to reference the data point.
Description.	Data point designation.

6.6 Job properties

6.6.1 Job tab

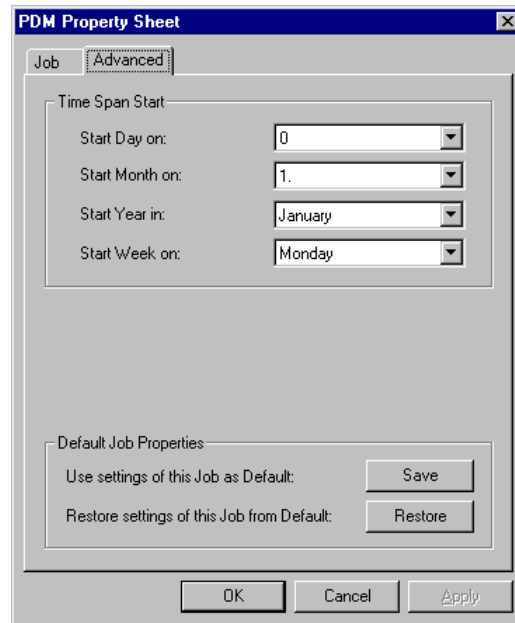
Note: Entries in this tab apply only to jobs and not to manual ADP reports. There is no relationship to the values set via Tools | Options | *Run Default* tab.



8701o62: Job properties – Job tab

Current	The ADP report includes the current, not yet completed date and time range.
Complete	The ADP report includes the previous, completed date and time span.
Sliding	The ADP report includes the time span for one day, one week, etc. until the exact current time.
Direct	<p>The ADP report includes all data between both the indicated start date and the stop date.</p> <p>Note: On entering time information, day, month, year, hours, and minutes can be replaced by entering "nn" (or "nnnn" for year). In this case, the corresponding element is saved with the values that are currently valid (e.g., the current month).</p>
Action	Selection to display the ADP reports for this job on-screen, print them, or save them to file.

6.6.2 Advanced tab



8701o63: Job properties – Advanced tab

Start Day On	The time when a day begins [0..24].
Start Month On	Day of a month that marks the beginning of a month [1..31].
Start Year In	Month that marks the beginning of a year [January. December].
Start Week On	Weekday that marks the beginning of a week [Monday. Sunday].
[Save]	Saves all values of both tabs as a default setting. Note: The "default settings" apply only to jobs and not to manual ADP reports. There is no relationship to the values set via Tools Options <i>Run Default</i> tab.
[Restore]	Restores the default values in the current job.

6.7 Start dialog properties

6.7.1 Start dialog box for ADP reports

Run Report - Atrium Temperatures

Display: Trend

Time Span: 7 Day

☒ Start/Stop Synchronization
☒ Align to Time Span Start

Start / Periode: Februar 1999

	Mo	Di	Mi	Do	Fr	Sa	So
4	25	26	27	28	29	30	31
5	1	2	3	4	5	6	7
6	8	9	10	11	12	13	14
7	15	16	17	18	19	20	21
8	22	23	24	25	26	27	28
9	1	2	3	4	5	6	7

Today: 01.03.99

Stop: März 1999

	Mo	Di	Mi	Do	Fr	Sa	So
8	22	23	24	25	26	27	28
9	1	2	3	4	5	6	7
10	8	9	10	11	12	13	14
11	15	16	17	18	19	20	21
12	22	23	24	25	26	27	28
13	29	30	31	1	2	3	4

Time: 00:00 00:00

OK Cancel

8701o64: ADP reports start dialog box

Layout

The display as set during report creation can be changed at this point and easily adjusted to current needs.

The following display types are available:

- **List** The data are displayed as number values in tables.
- **Table** Worksheets similar to Excel with tables and graphics.
- **Excel** Evaluation occurs in Excel only.
- **Trend** Display of curves and flows.

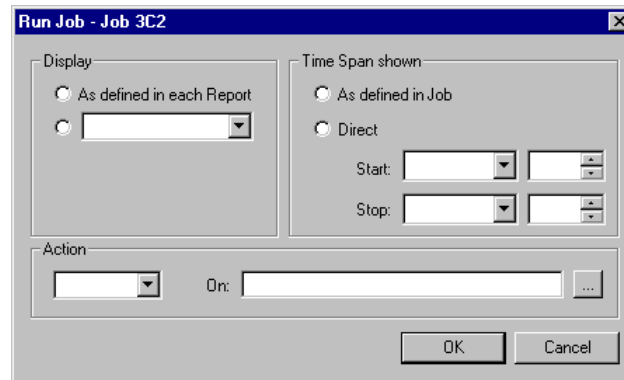
Period

Time span (or report time span) stands for a period of time in days, weeks, etc. for which you want to display data in a report.

The report period thus only indicates if the report is a daily, weekly, monthly, or yearly report, e.g., 3 weeks.

Start/Stop Synchronization	<p>Both the start and the end date are synchronized, i.e.:</p> <p>If you change the start date in the calendar, the program determines the associated end date and vice versa; additionally, different numbers of days in a month are included. The calculated values are based on the current date and the selected time span.</p> <p>Both the start and the end date are not synchronized, i.e.:</p> <p>The start and end date in the calendar can be set independent of each other to exact days and hours.</p>
Align to Time Span Start	<p>When you set synchronization, the start date is moved automatically in accordance with the default settings for the beginning of a day, month, and year.</p> <p>See context menu: Job <i>Advanced</i> tab.</p>
Start / Period	<p>Start date and time for an ADP report.</p> <p>Hint: If the start and stop date are both within the same month (\pm 1 week into another month), you can directly mark the time span in the calendar.</p>
Stop	<p>Stop date and time for an ADP report.</p>
[OK].	<p>Start of an ADP report.</p>

6.7.2 Start dialog box for jobs



8701o65: Start job

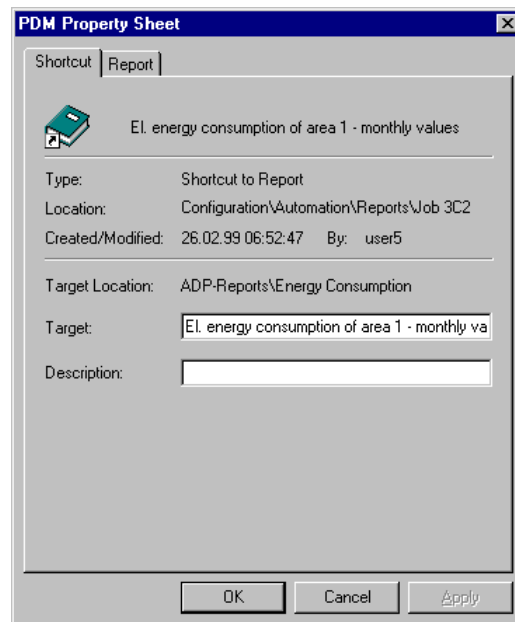
Layout	Specify if the same display is to be used for all ADP reports of the job. [List, Table, Excel, Trend].
Time Span Shown	<p>Specify if the time span for which you want to display data in the ADP report</p> <ul style="list-style-type: none">• Derived from the job properties.• Entered at this location.
Action	Selection to display the ADP reports for this job on-screen, print them, or save them to file.
[OK].	Start the job.

6.8 Shortcut properties

6.8.1 *Shortcut* tab

PdmExplorer handles shortcuts to ADP reports, data series, and data points as objects.

The example below shows the shortcut to an ADP report.



8701o66: PDM properties – *Shortcut* tab

Header data

Name, type, path, generation date, and creator of the shortcut.
Path for the referenced ADP report.

Target

Name of the referenced ADP report.

Description.

This text field allows you to document the shortcut that your are editing.

***Report* tab**

The *Report* tab displays all properties of the original report.

Note: This type of original object display does not correspond to Windows standard functionality.

7 Mapping data series to the time period of report

Terms

Compression interval

The compression interval specifies the time periods at which a compressed value is to be calculated and saved in the data series.

Report resolution (short form: resolution)

The report resolution indicates the time resolution (e.g. 1 value per day) applied to displaying data series values in a report.

In this context, the terms "report time span" and "resolution interval" are used.

7.1 What is it?

Normally, you select the report resolution to match either the compression intervals for the data series to be displayed or the recording interval for uncompressed data series. However, this is not mandatory.

This chapter describes how data series values, whose compression or recording intervals do not match the selected report resolution, are displayed in a report.

Example: Display of "spontaneous data" in a report featuring daily values.

PDM preps the data series values as follows to map them to the selected report resolution:

1. Determine the data series values suitable for report display and, if necessary, shift the values to the report resolution.
2. Consider the capture range for values with min. time deviation from the interval limit.

PDM preps the data series values and passes them on to ADP. They are then available in ADP for all types of display (List, Trend, Table, Excel).

7.2 Determine values to be displayed

7.2.1 Report with "resolution=no interval"

The following applies to the evaluation types "Trend" and "Excel":

All values for the selected data series are displayed in the report according to the individual time stamp.

Faulty values—marked by an associated quality attribute in the data series to be displayed—can be hidden. The corresponding curve then has gap.

The following applies to the evaluation types "List" and "Table":

All values for the selected data series are displayed in one report row each according to their time stamps (one row per different time stamp).

Note

When displaying multiple data series per report row, a value is displayed for each data series, even if a data series does not have time stamp data for the row. Remember this when interpreting a report!

7.2.2 Report with predefined resolution

If data series values whose compression interval does not match the predefined report interval (resolution) are displayed in a report, the values are mapped as per the following rules to the report resolution.

This time adjustment only applies to report display. The real values and time stamps are not changed in the database.

For compatibility reasons (e.g. to VISONIK), determination of the values to be displayed depends on the respective type of compression for the data series.

The following applies to all types of compression:

- If a value of the data series to be displayed matches the start time of the resolution interval, then this value is used.
- Faulty values with a quality attribute in the data series to be displayed, are **not** considered for display.

The following applies to recorded data series with spontaneous data and to recorded and derived data series with sample values:

- If the data series does not supply a value whose time stamp matches that of the resolution interval's start time, the **last good known** value of this data series is used.

The following applies to all other data series, i.e., for difference, mean, minimum, maximum, and sum values:

- If the data series to be displayed does not supply a value whose time stamp matches that of the resolution interval's start time, the **last good known** value **after** the start time of the resolution interval is used.

7.3 Examples – Values to be displayed

The following examples do not consider the capture range.

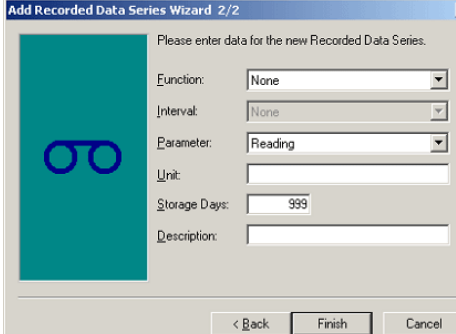
7.3.1 Data series display with spontaneous data (COV)

7.3.1.1 With "resolution=no interval"

A data series without function and interval is displayed in a report without resolution indication.

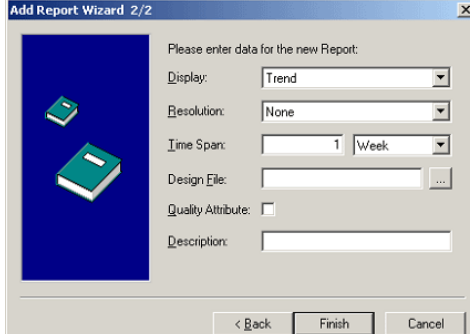
The data series and the report are defined as follows:

Data series definition



8734o92en

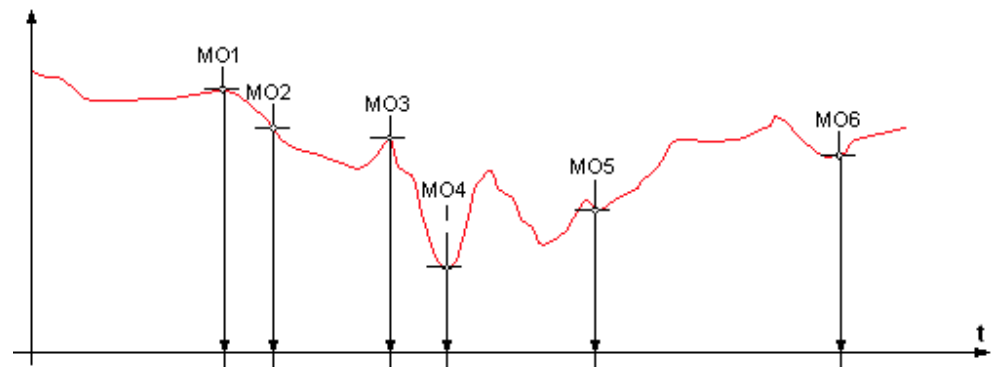
Report definition



8734o93en

Report display

The time stamps for the values are displayed in the report as saved in the database. There is no shift.



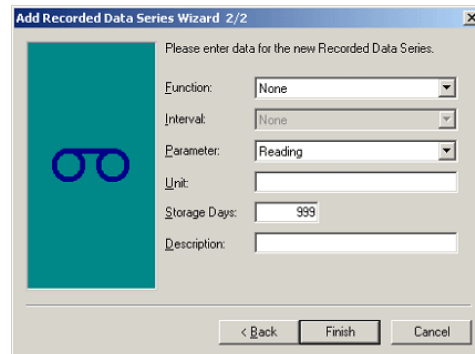
8734j94: Display without report resolution

7.3.1.2 With predefined report resolution

A data series without function and interval is displayed in a report with predefined resolution.

The data series and the report are defined as follows:

Data series definition



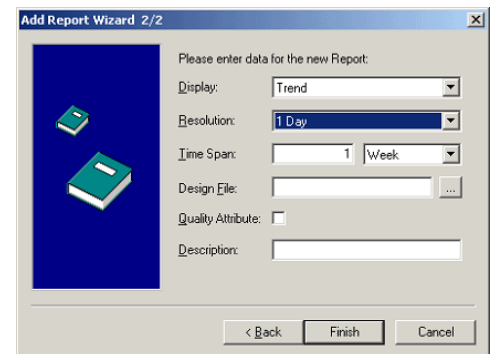
The 'Add Recorded Data Series Wizard 2/2' dialog box contains the following fields and options:

- Function: None (dropdown)
- Interval: None (dropdown)
- Parameter: Reading (dropdown)
- Unit: (empty text field)
- Storage Days: 999 (text field)
- Description: (empty text field)

Buttons at the bottom: < Back, Finish, Cancel.

8734o88en

Report definition



The 'Add Report Wizard 2/2' dialog box contains the following fields and options:

- Display: Trend (dropdown)
- Resolution: 1 Day (dropdown)
- Time Span: 1 Week (dropdown)
- Design File: (empty text field with browse button)
- Quality Attribute: (checkbox, unchecked)
- Description: (empty text field)

Buttons at the bottom: < Back, Finish, Cancel.

8734o96en

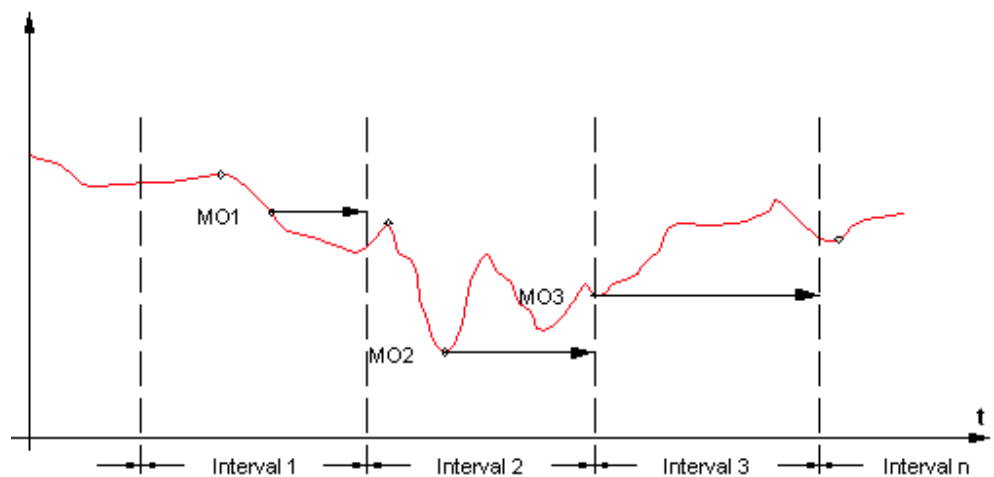
In the example, several spontaneous values are available within the resolution interval. Even though the report was defined by using a predefined resolution, only one value per interval is to be displayed in the report.

Report display

In the report, the spontaneous values are moved to the start point of the next resolution interval, i.e. to the **right**.

Among multiple values, the value closest to the interval limit is displayed.

If values are missing, the **last known good** value of this data series is used.



8734j97: Display with report resolution

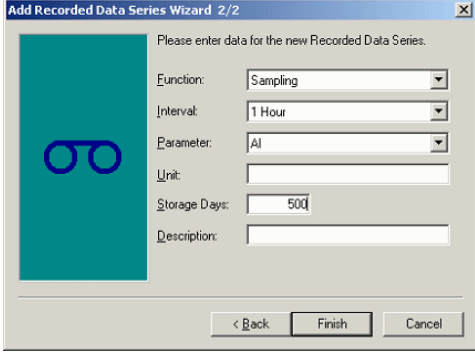
7.3.2 Data series display with sampling values

7.3.2.1 With "resolution=no interval"

A data series with compression function "sampling value" is displayed in a report without predefined resolution.

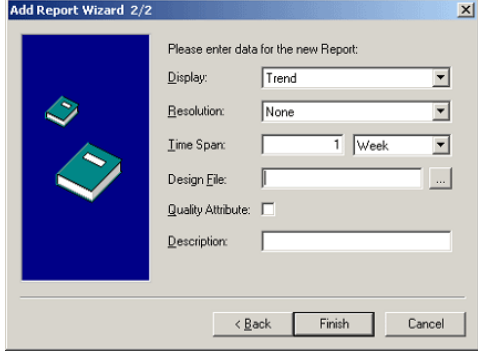
The data series and the report are defined as follows:

Data series definition



8734o98en

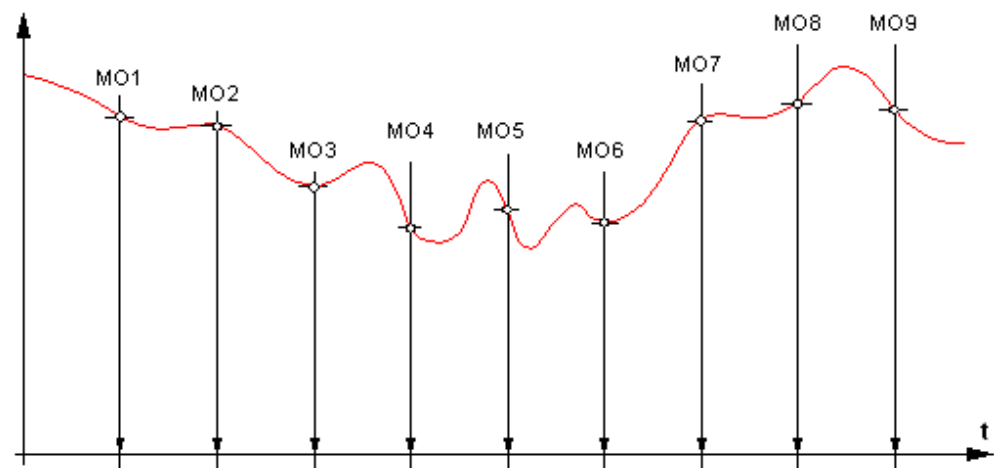
Report definition



8734o99en

Report display

The time stamps for the values are displayed in the report as saved in the database. There is no shift.



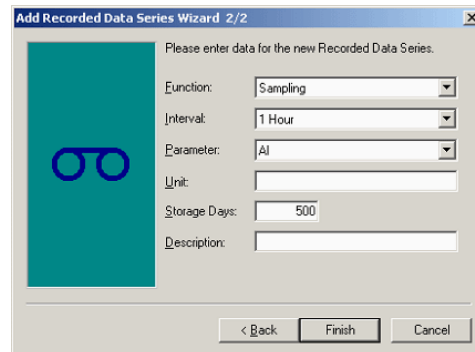
8734z02: Display without report resolution

7.3.2.2 With predefined report resolution

A data series with compression function "sampling value" is displayed in a report with predefined resolution. The report resolution selected is greater than the compression interval for the data series.

The data series and the report are defined as follows:

Data series definition



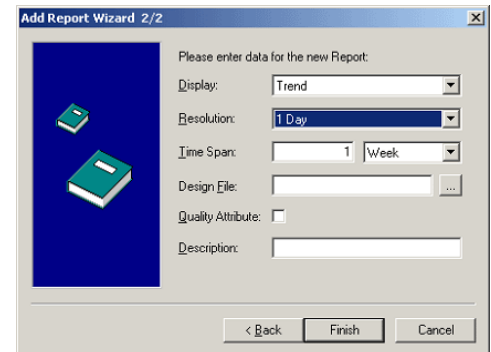
The dialog box 'Add Recorded Data Series Wizard 2/2' contains the following fields:

- Function: Sampling
- Interval: 1 Hour
- Parameter: AI
- Unit: (empty)
- Storage Days: 500
- Description: (empty)

Buttons at the bottom: < Back, Finish, Cancel.

8734oA0

Report definition



The dialog box 'Add Report Wizard 2/2' contains the following fields:

- Display: Trend
- Resolution: 1 Day
- Time Span: 1 Week
- Design File: (empty)
- Quality Attribute: (unchecked)
- Description: (empty)

Buttons at the bottom: < Back, Finish, Cancel.

8734oA1

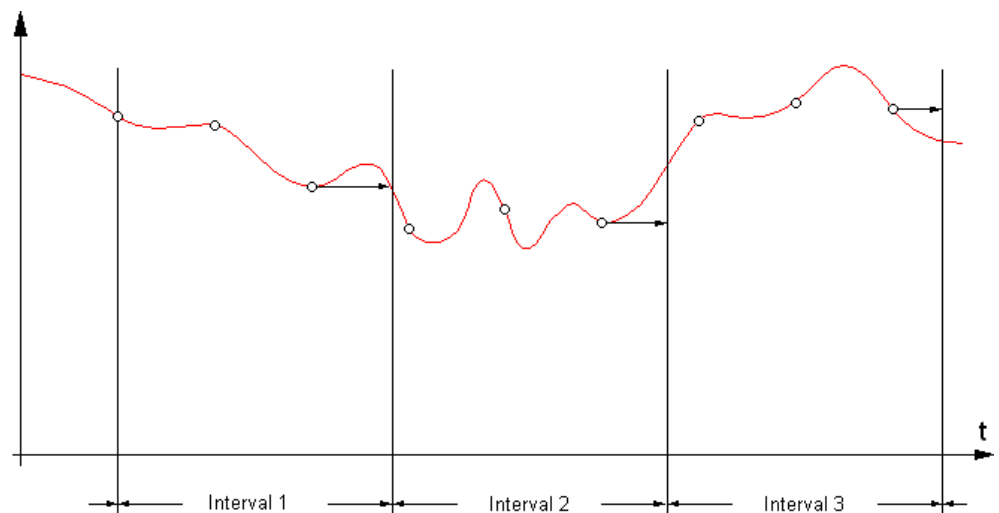
As the resolution defined in the report is greater than the compression interval of the data series, several values are available for the resolution interval. Even though the report was defined by using a predefined resolution, only one value per interval is to be displayed in the report.

Report display

In the report, the spontaneous values are moved to the start point of the next resolution interval, i.e. to the **right**.

Among multiple values, the value closest to the interval limit is displayed.

If values are missing, the **last known good** value of this data series is used.



8704z03: Display with report resolution

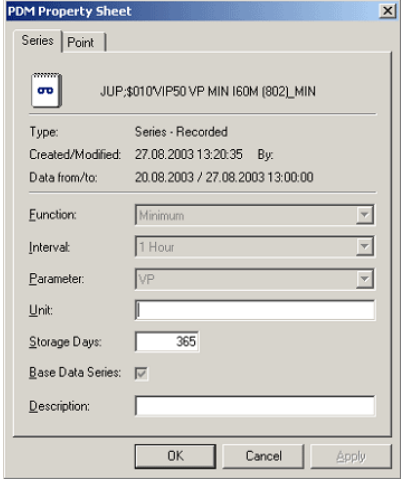
7.3.3 Data series display with mean, minimum, maximum, difference, or sum values

7.3.3.1 With predefined report resolution

A data series with one of the above compression functions is displayed in a report with predefined resolution. The report resolution selected is greater than the compression interval for the data series.

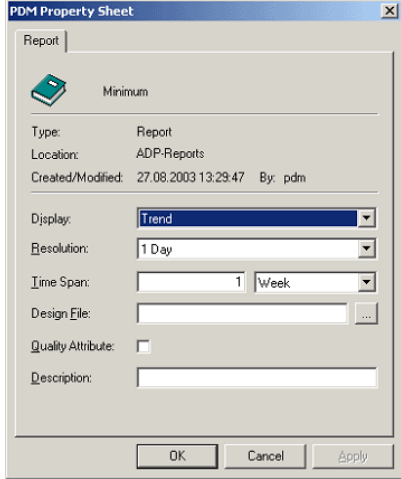
The data series and the report are defined as follows:

Data series definition



8734oA2

Report definition



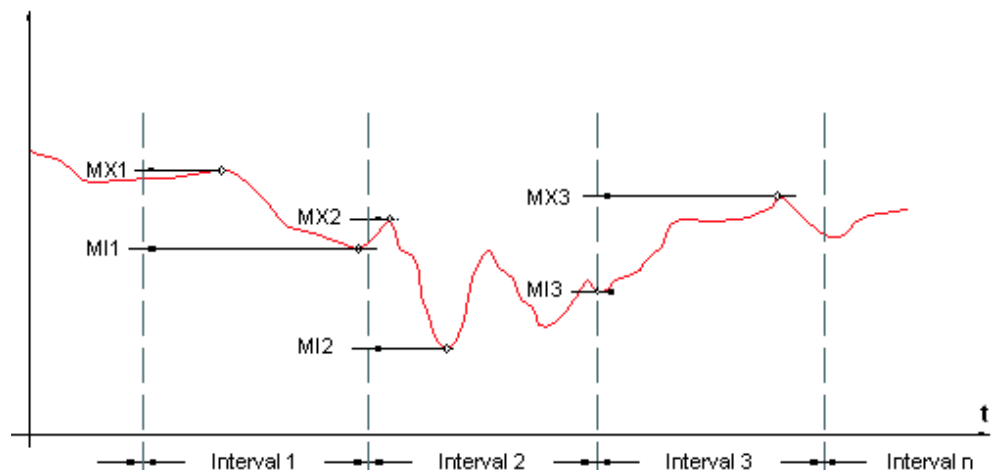
8734oA3

Report display

In the report, the values to be displayed are moved to the start point of the current resolution interval, i.e. to the **left**.

Among multiple values, the value closest to the interval limit is displayed.

If values are missing, the **first known good** value after the start time of the resolution interval is used.



8734jA4

7.4 Capture range

Values, whose time stamp deviates less than 10 seconds (capture range) from the start point of a resolution interval, are corrected with regard to time. Depending on the compression type (see previous section), they are assigned either to the preceding or the succeeding resolution interval.

This function cannot be disabled or changed, as it is a canned program function.

This logic ensures that values, which are recorded at very small time delays for reasons of transmission, are not assigned to the wrong resolution interval.

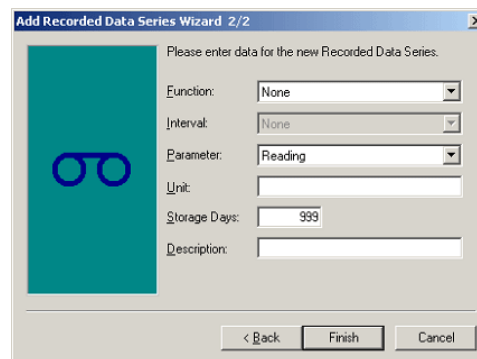
Example

In the example, spontaneous i.e. uncompressed data, is displayed in a report with "resolution= 1 hour".

The example shows that the values are moved within the capture range to the next interval limit (left).

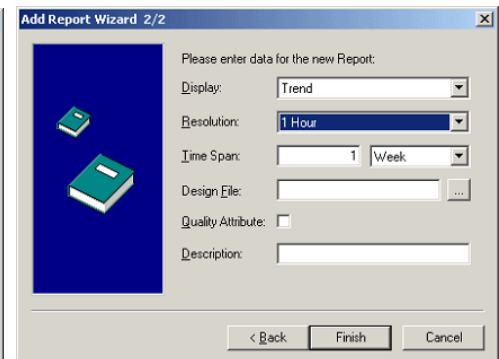
The data series and the Trend report (list) are defined as follows:

Data series definition



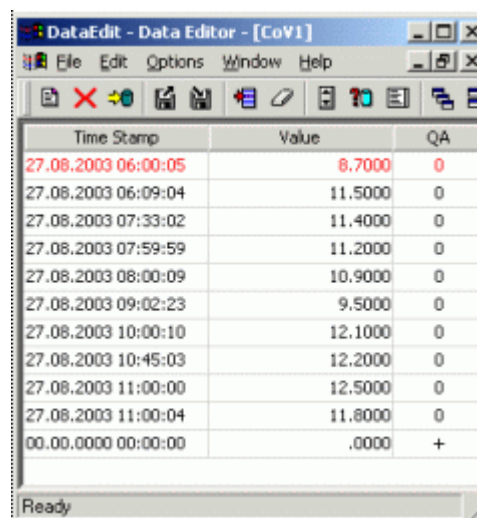
8734o88en

Report definition



8734o89en

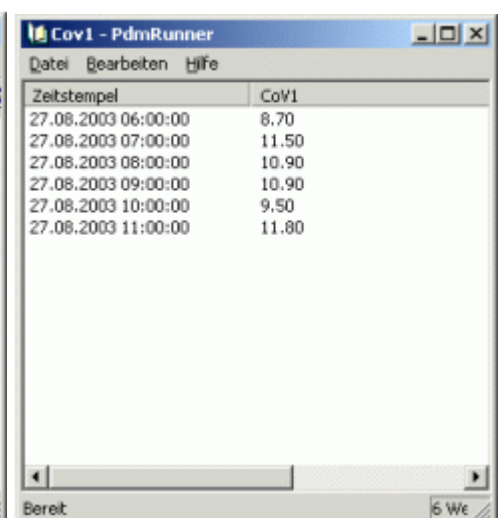
Data series values.



Time Stamp	Value	QA
27.08.2003 06:00:05	8.7000	0
27.08.2003 06:09:04	11.5000	0
27.08.2003 07:33:02	11.4000	0
27.08.2003 07:59:59	11.2000	0
27.08.2003 08:00:09	10.9000	0
27.08.2003 09:02:23	9.5000	0
27.08.2003 10:00:10	12.1000	0
27.08.2003 10:45:03	12.2000	0
27.08.2003 11:00:00	12.5000	0
27.08.2003 11:00:04	11.8000	0
00.00.0000 00:00:00	.0000	+

8734o90en

Values visible in list or Trend.



Zeitstempel	CoV1
27.08.2003 06:00:00	8.70
27.08.2003 07:00:00	11.50
27.08.2003 08:00:00	10.90
27.08.2003 09:00:00	10.90
27.08.2003 10:00:00	9.50
27.08.2003 11:00:00	11.80

8734o91en

8 Table display

Tip!



Do not use this display for new projects, as it will not be supported in the future. Use "Excel" rather than "Table".

This part of the program is supported by two special help files: VCF1.hlp and VCFI.hlp.

8.1 What is Formula One?

Formula One is a spreadsheet program integrated in ADP.

When you create an ADP report in "Table" display, the report is then displayed in Formula One.

With Formula One, you can change an ADP report's design. This design can then be saved in the form of a design file and reused for other reports.

If an existing design can be used for the planned ADP report, simply select the design file's name (extension .vts) in the "Design File" field when designing the report.

Important



Normally, Siemens Building Technologies creates Formula One reports. As a result, the sections below only briefly discuss Formula One. Formula One is documented in a separate, English-language manual.

8.2 How to generate a design file?

8.2.1 Step 1: Create an outline display

1. Create a new, blank ADP report in the "Table" display as needed.
 - Link the data series to this ADP report.
 - Enter any report-specific adjustments.See also "How to create an ADP report" in the program's online help.

In the PdmExplorer:

2. Right-click the associated ADP report.
The PdmExplorer opens the context menu.

In the context menu:

3. **RUN** or **RUN...**
The ADP report appears in outline display.
If no special design is assigned to a report, the data series are always transferred to the last sheet of a workbook (Formula One file).
Without a design file, the *new.vts* workbook is used.

Outline display of an ADP report

After step 3, the ADP report is displayed in its basic form as shown below.
For our example, we will use a report with three temperatures. The associated day values of October 1996 are displayed.

Atrium temperatures - C:\PDM-ADP\visual\New.vts				
File View Help				
	A	B	C	D
1	Atrium temperature	AI	AI	AI
2		Sampling	Sampling	Sampling
3		A*10 67982	A*10 67985	A*10 63990
4		GRA:\$014033	GRA:\$014042	GRA:\$013030
5				
6		Recorded	Recorded	Recorded
7		Visonik	Visonik	Visonik
8		-	-	-
9				
10		Atrium temperature 2nd floor	Atrium temperature 5th floor	Outside temperature
11	1.10.96 0:00	19.6	21.55	10.9
12	2.10.96 0:00	19	20.95	12.1
13	3.10.96 0:00	18.1	19.95	6.35
14	4.10.96 0:00	17.95	20	5.2
15	5.10.96 0:00	18.75	20.75	11.55
16	6.10.96 0:00	17.15	19.05	7.35
17	7.10.96 0:00	18.15	20.15	10.25
18	8.10.96 0:00	18.1	20.05	10.75
19	9.10.96 0:00	17.55	19.55	11.45
20	10.10.96 0:00	17.65	19.8	11.2
21	11.10.96 0:00	17.75	19.75	10.85
22	12.10.96 0:00	16.75	18.65	6.85
23	13.10.96 0:00	17.5	19.45	4.9
24	14.10.96 0:00	18.4	20.25	5.7
25	15.10.96 0:00	19.15	21.15	8.55
26	16.10.96 0:00	16.95	19.45	8.6
27	17.10.96 0:00	16.65	18.6	9.05

8701o67: ADP report – outline display

Explanation

- **Rows 1 to 9.**
The name defined for the report is displayed at the top left.
Columns B, C, and D contain general information on each data series.
- **Row 10.**
Columns B,C, and D contain the headers as used for the individual data series in the report.
- **From row 11 – leftmost column.**
This column contains the time stamp corresponding to the resolution defined for the report (1 day for our example).
- **From row 11 – columns to the right.**
These columns contain the data series values.

Beachte:

- The left to right order corresponds to the order in which data series are listed in the ADP report.
- Each data series with quality attributes requires two columns; without quality attribute, each data series takes up just one column.

8.2.2 Step 2: Prepare raw data

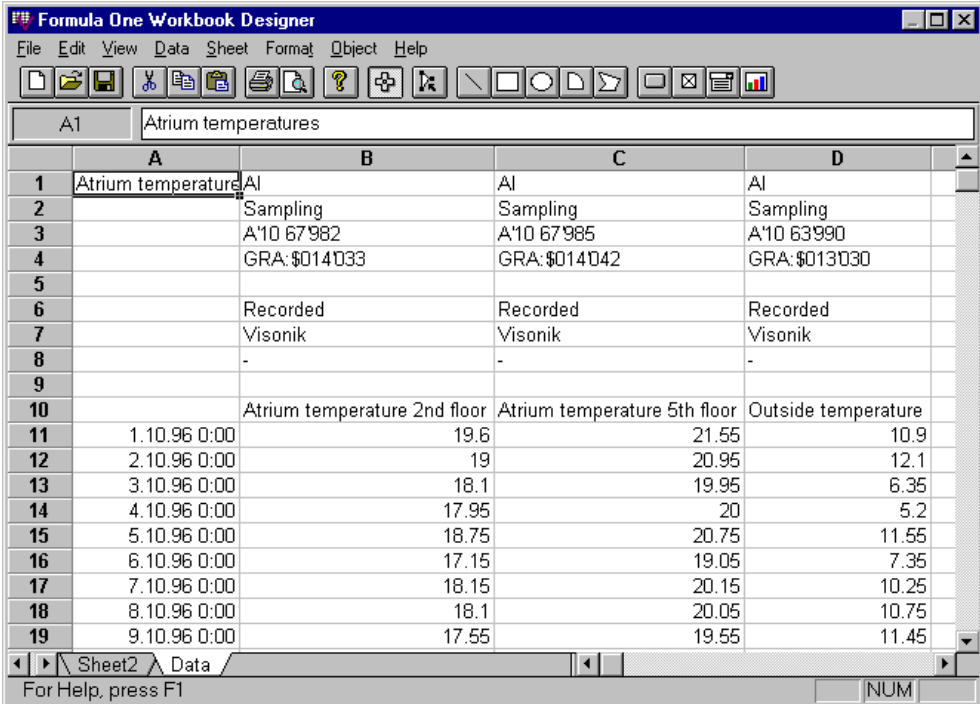
Preparations

For Formula One to use the date and time indications from column A for x-axis labeling of the graphic to be created, follow the step-by-step **model** instructions below. The main task consist of preparing the raw data so that the contents of column A are no longer formatted in date-form, but instead as plain text.

In the outline display:

1. Right double-click.

The "Formula One Workbook Designer" dialog box opens.



	A	B	C	D
1	Atrium temperature	AI	AI	AI
2		Sampling	Sampling	Sampling
3		A*10 67982	A*10 67985	A*10 63990
4		GRA:\$014033	GRA:\$014042	GRA:\$013030
5				
6		Recorded	Recorded	Recorded
7		Visonik	Visonik	Visonik
8		-	-	-
9				
10		Atrium temperature 2nd floor	Atrium temperature 5th floor	Outside temperature
11	1.10.96 0:00	19.6	21.55	10.9
12	2.10.96 0:00	19	20.95	12.1
13	3.10.96 0:00	18.1	19.95	6.35
14	4.10.96 0:00	17.95	20	5.2
15	5.10.96 0:00	18.75	20.75	11.55
16	6.10.96 0:00	17.15	19.05	7.35
17	7.10.96 0:00	18.15	20.15	10.25
18	8.10.96 0:00	18.1	20.05	10.75
19	9.10.96 0:00	17.55	19.55	11.45

8701o71: Formula One Workbook Designer

In the Formula One Workbook Designer:

2. Menu **Sheet | Insert Sheet**.

Insert a new sheet in the workbook.

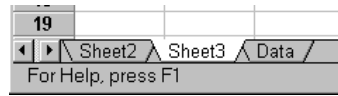
This creates additional space for subsequent reformatting of column A or of further conversions of other columns.

In the Formula One Workbook Designer:

3. **Double-click the worksheet name.**

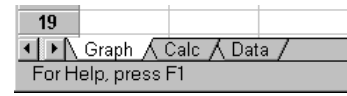
Name the worksheets as follows (from left to right):

Before



8701o72

After



8701o73

Using the three
worksheets

Graph

This worksheet will later contain the graphic.

Calc

This worksheet contains references to all raw data to be displayed in the "Data" worksheet. This is where column A is converted from date format to text format!

Data

Contains the raw data.

Preparing the raw data

Worksheet "Calc" is used to create the references to all raw data of the "Data" sheet. The individual cells contain the formulas for further calculation and reformatting.

In the Formula One Workbook Designer:

4. **Select the "Calc" worksheet.**

Change to the "Calc" worksheet.

In the "Calc" worksheet.

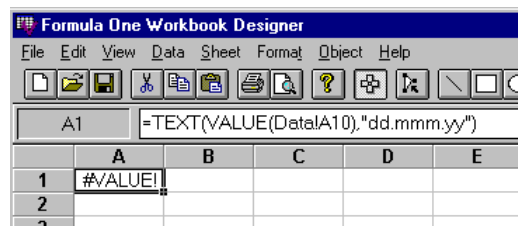
5. **Select cell A1.**

Enter the following formula in this cell:

`=TEXT(VALUE(Data!A10),"dd.mmm.yy").`

Comment:

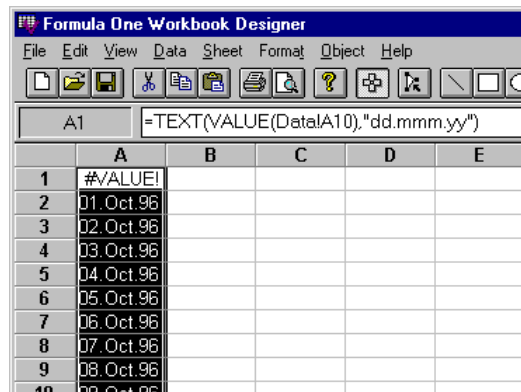
- Data!A10 refers to our example and references the first date value in the "Data" worksheet.
- "dd.mmm.yy" or "dd.mmm.yy h:mm" (with time of day) refers to the desired formatting for x-axis labeling.



8701o74: Formula One Workbook Designer

In the "Calc" worksheet, cell A1:

6. **Click** the small square at the lower right corner of the cell and **drag** the selected cell by pressing the left mouse button to cell A32.



8701o75: Formula One Workbook Designer

The date for range A1 to A32 is now saved in the new text format and can be used by Formula One for x-axis labeling of the graphic.

In the "Calc" worksheet.

7. **Select** cell B1.
Enter the following formula in B1:

=Data!B10.

Comment:

- Data!B10 refers to our example and references the first data series in the "Data" worksheet.

In the "Calc" worksheet, cell B1:

8. **Click** the small square at the lower right corner of the cell and **drag** the selected cell by pressing the left mouse button to cell B32.

The raw data of the first data series is now referenced in the "Calc" worksheet.

In the "Calc" worksheet.

9. Repeat steps 7 and 8 for the second (Data!C10) and third (Data!D10) data series.

Following this process, all data in the "Calc" worksheet are compatible to graphic processing.

8.2.3 Step 3: Generate a graphics outline

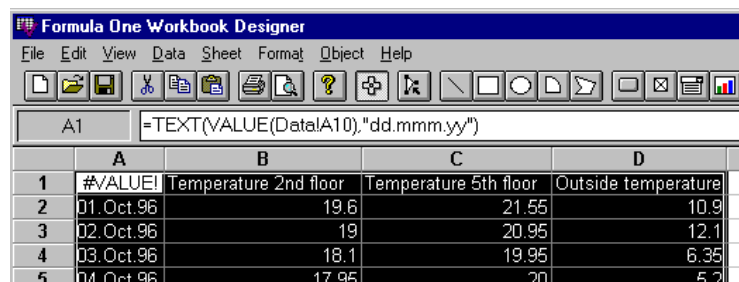
The graphic is to be generated on the "Graph" worksheet.

In the "Calc" worksheet.

1. Select the data to be displayed (cells A1 to D32 for our example).

The following generally applies:

- In order to graphically display the values, select the range so that the column with the time span is located to the very left with one blank field at the top (this is the only way for the time span to be interpreted as X-axis information).
- The columns to the right—containing the data series values—must have a title (data series name) in the header row.
- Columns with quality attributes may not be selected.
- If required, copy the columns that you want to display in the proper order to a new worksheet.



The screenshot shows the 'Formula One Workbook Designer' window. The formula bar for cell A1 contains the formula: `=TEXT(VALUE(Data!A10),"dd.mmm.yy")`. Below the formula bar is a table with the following data:

	A	B	C	D
1	#VALUE!	Temperature 2nd floor	Temperature 5th floor	Outside temperature
2	01.Oct.96	19.6	21.55	10.9
3	02.Oct.96	19	20.95	12.1
4	03.Oct.96	18.1	19.95	6.35
5	04.Oct.96	17.95	20	5.2

8701o76: Formula One Workbook Designer

To the right of the toolbar:

2. **Click** the graphic symbol.

In the Formula One Workbook Designer:

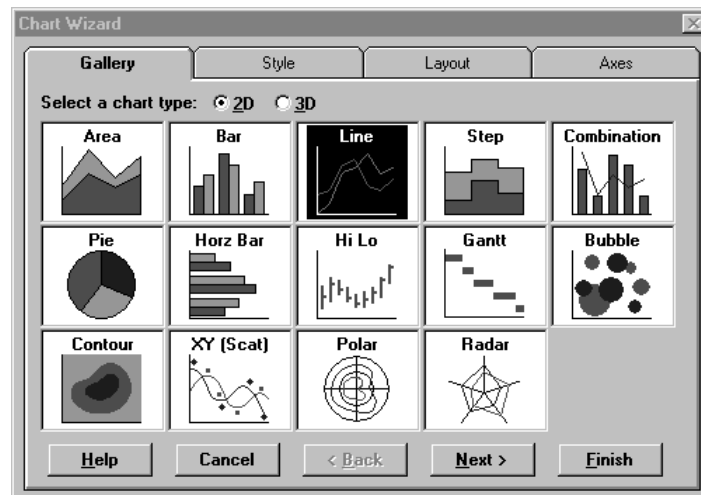
3. **Select the "Graph" worksheet.**

Change to the "Graph" worksheet.

In the "Graph" worksheet.

4. **Draw** a field for the future graphic using the left mouse button.
After releasing the mouse button, the "Chart Wizard" dialog box opens.

Chart Wizard



8673o82: Chart Wizard

In the Chart Wizard:

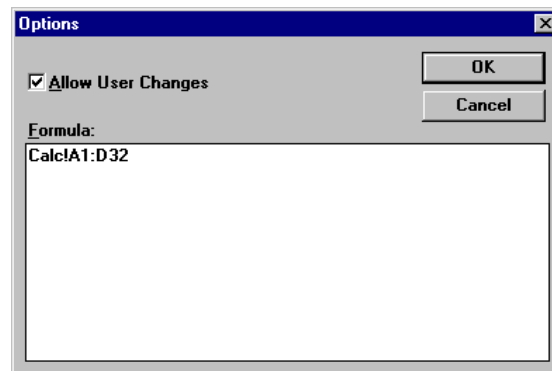
5. Select the settings and confirm with [Finish].
The first parts of the graphic are displayed, but without values.

Assign data to the prepared graphic

6. **Double-click** the graphic frame.

In the Formula One **Object** menu:

7. **Click** the **Options** menu item.
Formula One opens the following dialog box:



8673o83: Object – Options

In the *Options* dialog box:

8. Enter the data you want to insert in the graphic.

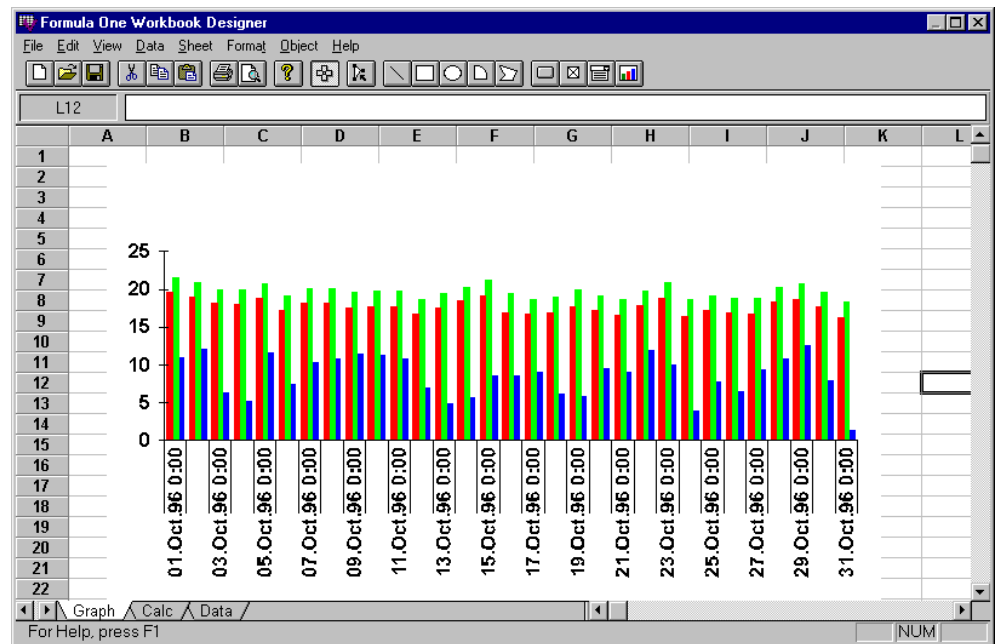
Syntax:

- Name of the series containing the raw data ("Calc" for our example).
- Exclamation mark.
- First cell of the range to be graphically displayed ("A1" for our example).
- Colon.
- Last cell of the range to be graphically displayed ("D32" for our example).

9. [OK]

The data is graphically displayed within the set range.

Graphic outline



8673o84: Graphic outline

8.2.4 Step 4: Optimize the graphic

Show title

Showing the title in this example helps us explain the process for all other options.

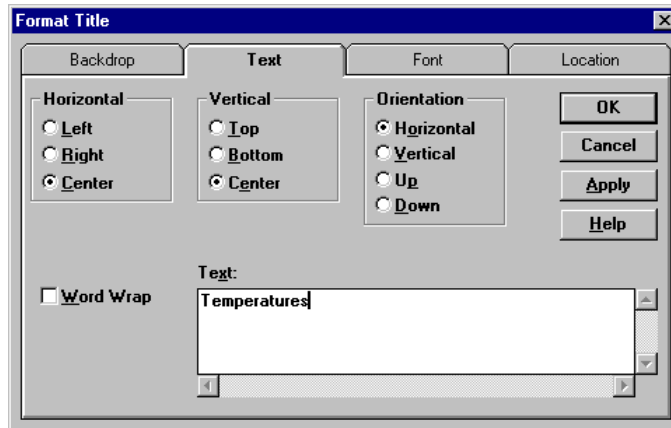
In the graphic:

1. **Double-click** the graphic.
The graphic is now selected.

2. **Right-click** the selected graphic.
A context menu with various options to edit the graphic's design opens.

In the context menu:

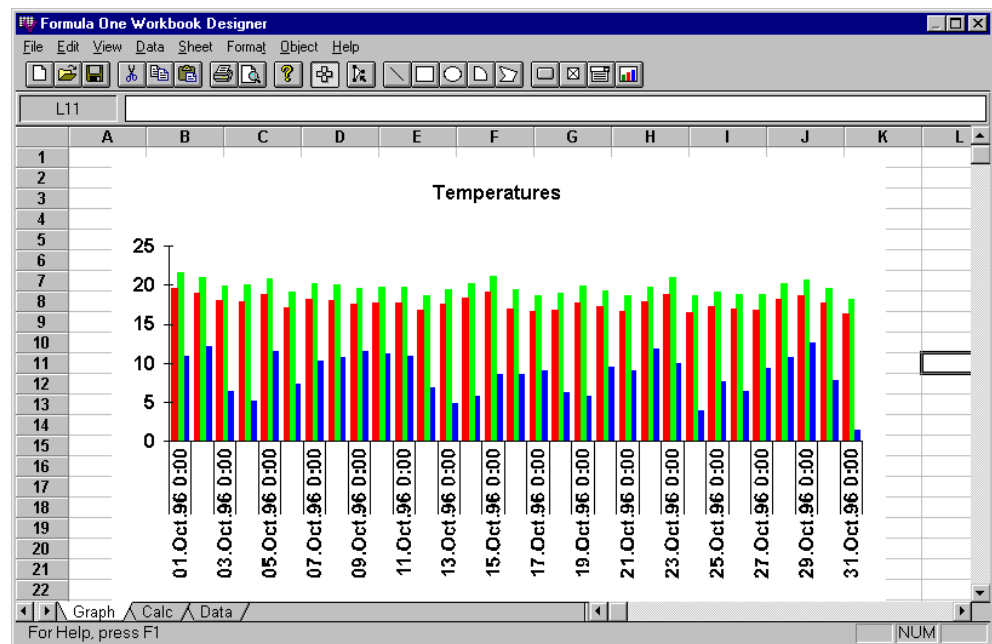
3. **Click** the **Title** menu item.
The following dialog box opens:



8673o85: Optimize the graphic – Select axes

4. In the *Format Title | Text* field.
Enter the title.
5. [OK]
The graphic is labeled as desired.

Optimized graphic



8673o87: Completed graphic

8.2.5 Step 5: Save a design file

In the Formula One Workbook Designer on the "Data" worksheet:

1. **Select** all cells.
2. Click: **Edit | Clear**.
Formula One opens the *Clear* dialog box.

In the *Clear* dialog box:

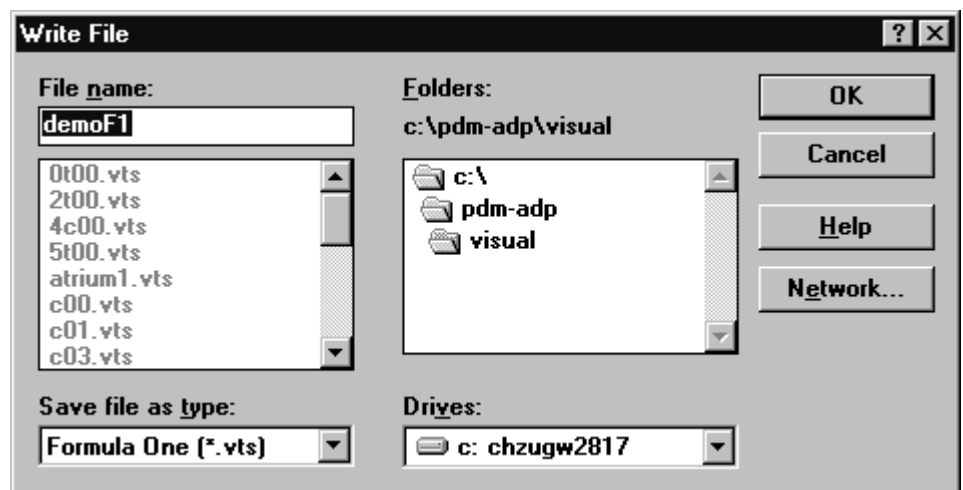
3. Select "Values".
If you forget to select the values, you will lose important formatting information.

In the *Clear* dialog box:

4. **[OK]**.
The "Data" tab is emptied and ready for the entry of new values when you retrieve a report.

Important: Before proceeding to the next step, make sure that cells are only selected on the tab containing the graphic to be displayed. If other cells on other tabs are selected, the report may be opened on a wrong worksheet.

5. Select **File | Write**.
The *Write File* dialog box opens:



8673o88: Save design file

In the *Write File* dialog box:

6. Type in the name of the design file.

In the *Write File* dialog box:

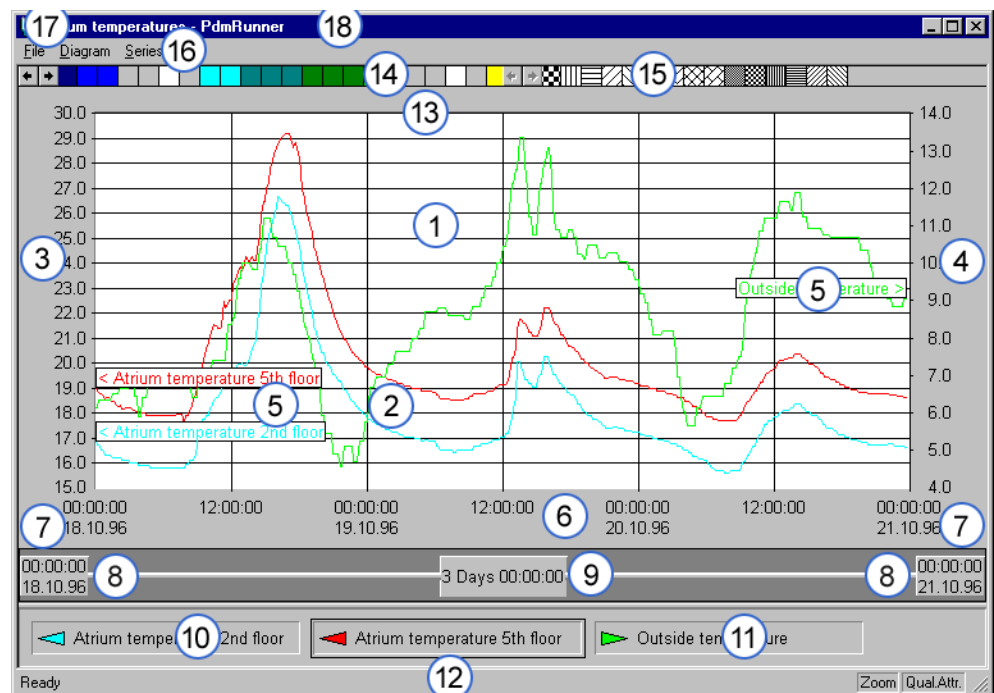
7. Select the *Visual* folder in pdm-adp.

In the *Write File* dialog box:

8. **[OK]**.
The design file is saved and is now available to other reports.

9 Trend display

9.1 The most important features at a glance



8701o01: The TREND window

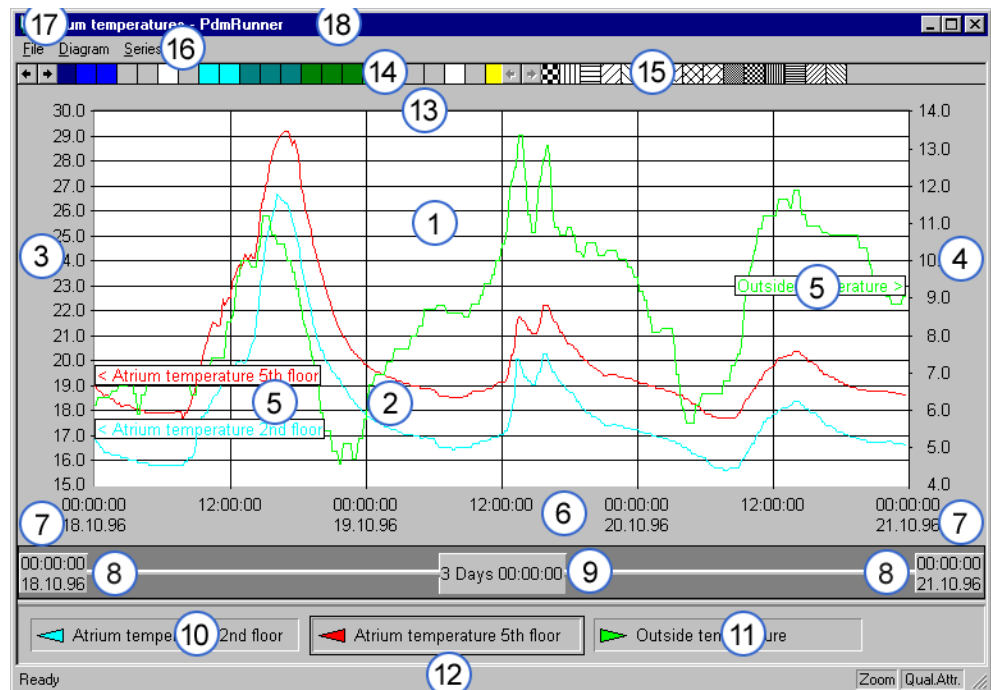
Trend window – mouse button functions

No.	Name	Left mouse button	Right mouse button
1	Graph	+ drag: zoom.	Diagram menu
2	Curves	Popup; (time/value of the last point).	Curve menu item.
3	Primary y-axis	–	Diagram menu
4	Secondary y-axis	–	Diagram menu
5	Data series name	–	Diagram menu
6	X-axis, time stamp	Time stamp on; if active, indication of value and QA in legend.	–
7	Hotspot	Time stamp from	–
8	Start time, end time	Slider; Setting of the display's start and end time.	–
9	Display Data selection	Slider; Data selection display with defined time span.	–

Left-click	Left double-click	Right-click	Right double-click






(Fortsetzung nächste Seite)





The most important features at a glance (continued)



8701o01: Trend window (repeat display)

Trend window – mouse button functions

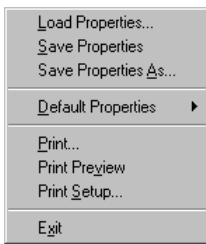
No.	Name	Left mouse button	Right mouse button
10	Curve-defining primary y-axis (name of report data series)	 Selection of "Curve" from the main menu.	 Curve menu item.
11	Curve-defining secondary y-axis (name of report data series)	 Selection of "Curve" from the main menu.	 Curve menu item.
12	Statusleiste	Bottom left: Program status. Bottom right: Number of values for the selected data series, magnifying glass and quality attribute status.	
13	Diagram border	 + drag: Maximize/minimize diagram.	–
14	Palette Bar	Color selection for diagram elements (click and drag).	–
15	Pattern Bar	Pattern selection for diagram elements (click and drag).	–
16	Menu bar	Menu for File, Diagram, and Curve.	–
17	Name of the displayed report.		
18	Name of the active design file.		

 Left-click
  Left double-click
  Right-click
  Right double-click

Trend displays the data series as *curves*.

The menus *File*, *Diagram*, and *Curve* help you design the Trend window:

File menu



8701o02en

Menu item	Function
Load Properties	Load individually created design properties for a Trend window.
Save Properties	Save design properties for a Trend window. Prerequisite: The design properties must already be saved under any name (see title bar).
Save Properties As	Save design properties of a Trend window under a specific name.
Default Properties	Drop-down list box; allows for loading standard settings from a tab file as well as saving standard settings in a tab file.

Note: The standard settings are used automatically if no design file is specified for the report.



Print	Windows functionality.
Print Preview	Windows functionality.
Print Setup	Windows functionality.
Beenden	Windows functionality.

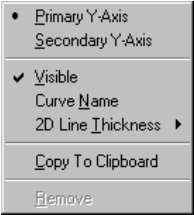
Diagram menu



8701o03

Menu item	Function
Copy	Submenu: Data, bitmap, meta file; copy window contents to different file formats.
Normal	2D display of the Trend window.
3D	3D display of the Trend window.
Data	Data table display.
Autoscale	Submenu: First y-axis, second y-axis; Activation/deactivation of automatic adjustment for curves in the display field.
X-Axis Division	Number of visible vertical lines (incl. chart border). This allows for labeling the x-axis at full-hour ticks (one or several hours).
Quality attribute	Active/Inactive. If active, values with bad QAs are displayed differently.
Steplines	Switches between step and continuous curve characteristics.
Zoom	Reset the zoomed window to standard size (the function is activated automatically on left-click and drag).
Palette Bar	Show/hide the color bar; assign colors to diagram background and curves by color/drag to the selected object.
Pattern Bar	Show/hide the pattern bar to assign patterns to curves by clicking a pattern and dragging it to the selected curve.
Legend	Show/hide curve legends [10, 11].
Chart Properties	Display properties setting for a chart/diagram using five tabs.
Font Properties	Define font types for diagram/chart labeling.

Curve menu



8701o04

Menu item	Function
Primary Y-Axis	Assign y-axis of a (🖱️) curve to the left (primary) or right (secondary) y-axis. The place where the curve name is displayed depends on the status of the associated y-axis (primary/secondary axes).
Secondary Y-Axis	
Visible	Show/hide the activated curve. (Click 🖱️ the curve directly or 🖱️+🖱️ the curve legend).
Curve Name	Toggle item; show/hide the curve name.
2D Line Thickness	Change the curve's line thickness.
Copy to Clipboard	Save the table values for a (🖱️) curve to the clipboard. Format: Clipboard format for Excel and Formula 1.
Remove	Windows functionality.

- The curve legends [10, 11] indicate which curve represents which report data series.
- The time resolution on the x-axis [6] changes in accordance with the currently displayed report time span.



Important

- If the quality attributes (QA) are active in the report, unreliable * values (with QAs **6**, **7**, **8**, and **n**) are *not* displayed in curves. *The curve is interrupted at these locations.*
- Definition for *unreliable*:

$$\text{Unreliable} = (6 + 7 + 8 + n) \cdot (\bar{i} + \bar{!})$$

- In other words: A gap in a curve points to an unreliable value. You can locate this value (including QA) by activating the time stamp [6].
- Trend does not allow you to display more than 10 data series and not more than 10,000 values per data series.

9.2 Standard operating functions

9.2.1 File menu

When you open the Trend window for the first time the [Save Properties] and [Save Properties As] buttons have no meaning. They become important only after you change the window settings, e.g., when you change the background color or the font. You can save these changes for later use.

Save Properties As

This button allows you to save settings under a new name and retrieve them later via "Load Properties".

Load Properties

Allows you to retrieve earlier saved settings at any time. The window settings are then adjusted to the loaded properties.

Save Properties

Use to save a previously loaded Trend design file, changed during the active session.

Default Properties

Drop-down list box with [Load from tab file] and [Save to tab file]. Use this drop-down list box if:



- Other default settings are active and you want to load the settings from the tab file to the current session.
- You have changed the settings and want to save the new settings as the default settings to the tab file.

Print

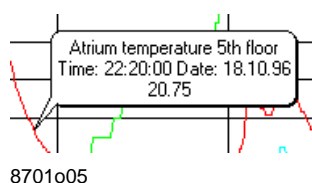
Print, Print Preview, Printer Setup and Exit:
Windows functionality.

**Important information
for the following
sections**





Remember the basic functions of the mouse buttons:

-  (*right-clicking*) an element (=object) opens the menu items for the associated object (context menu).
-  (*left-clicking*) opens a standard menu featuring Windows functionality as well as various functions not available from the menus.

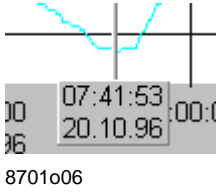
9.2.2 Retrieve detailed information on any point of a curve



If you require more information on any point on the curve, do the following:

- **Curve** at any point : A window appears with the present value (time and value).
When between two points , the data from the *prior* point is displayed.
- **Curve** : The *Curve* context menu opens.
- Within a graph : The *Diagram* context menu opens.

9.2.3 Display detailed information for a specific point in time



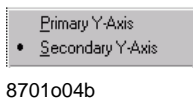
If you want to display an exact point in time for a specific event on a curve:

- Move the mouse pointer below the diagram to the point in time you want to display.
- : A vertical line with the exact time stamp appears. The exact value of the data series for this point in time is displayed in the curve legend.
- To **remove** the vertical line, click the hotspots [7] to the left or to the right outer border next to the time stamps of the x-axis.



Additionally, all quality attributes other than 0 (0 is not displayed for "OK") are displayed. This proves especially helpful for values with quality attributes 7, 6, 8, 8 which are not displayed in the curve. Note: QAs are displayed only if activated in the report.

9.2.4 Assign a data series to the primary or secondary y-axis



It may sometimes prove useful to assign one of the displayed data series to a secondary y-axis located to the right of the graphic. Proceed as follows:

- Click the desired data series on the curve.
- Click : "Secondary Y-Axis" in the open menu .

Note: When *Autoscale* is active, the partition of the secondary y-axis is oriented to the bandwidth of the existing values.

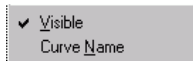
- If you want to reassign the values to the left axis:
Repeat the above procedure and select "Primary Y-axis".

Note: You cannot hide the left y-axis.

- click the legend of the desired data series (selects the curve).
- In the **Series** menu, click the desired axis.

Alternative procedure

9.2.5 Show data series names



You can show or hide the curves and the names of the data series for each curve. The names are shown to the left or the right in dependence of the assigned y-axis. Proceed as follows to **show** the name:

- Point the mouse pointer to the desired curve.
- Right-click to open the **Series** menu and select **Visible** or **Curve Name**.

Note: A curve **name** is shown only if the respective curve touches the left (or right) diagram border in the currently displayed area.

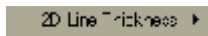
Hide a curve or a data series name:

- Apply the above procedure!
- click the legend of the desired data series (selects the curve).
- In the **Series** menu, click **Curve Name** or **Visible** (checkmark disappears).



Alternative procedure

9.2.6 Change line thickness

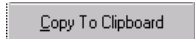


8701o04a

This menu allows you to change the line thickness of the selected curve. Any values between 1 and 10 are available.

The selected line thickness particularly impacts the curve display; printed curves are not impacted as much.

9.2.7 Copy data series to the clipboard



8701o04d

This menu item allows you to copy data series to the clipboard and then paste them in the respective application (e.g., Excel). Refer to the chapter on lists for more detailed information.

9.2.8 Change window size and graphic selection

Proceed as follows to change the window size and the graphic selection (standard Windows functionality):

- Move the mouse pointer to a line until the pointer becomes a double arrow.
- Press and hold down the left mouse button.
- Move the mouse pointer over the desired point and release the mouse button.

9.2.9 Change the displayed report time span

After retrieving a Trend report, the displayed width corresponds to the requested time span.

The report time span as well as the start and end times (time and date) are displayed below the graphic by the three windows connected via a bar.

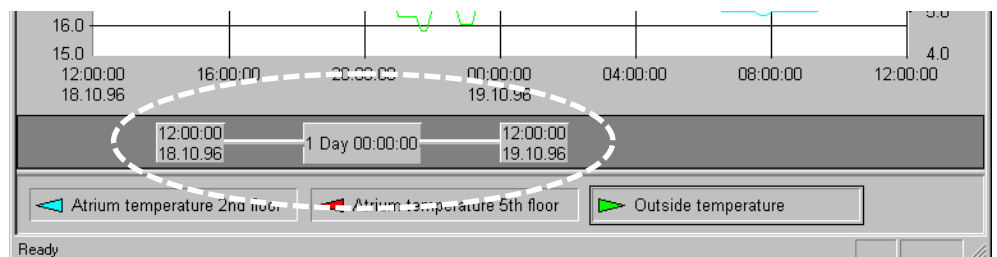
The windows to the left and right serve as the operating elements to restrict the report time span to the desired range: Use the center window to move the defined time span to any other data within the current report.

Moving the start and end times

- To restrict the report time span, left-click the start time window or the right end time window, hold down the button and move the window.

Both time indication and display change according to the movement. Vertical time lines are rescaled automatically for unchanged time spans.

- Note: If you want to redisplay the entire time selection, pull both windows (left and right) to the outer edges.





8701o07: Zooming a time span window

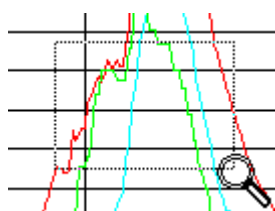
Moving the reduced selection

If the displayed selection was reduced as described above, you can move it within the defined report time span as follows:

- Click the centre time box containing the reduced report time span, hold down the mouse button and move it to the right or left:
The start and end time indications change accordingly.

Alternative procedure

You can also drag the report left of the left or to the right of the right time stamp . The range moves together with the effective time period: The smaller the reporting period, the smaller the steps when moving. In the above example, the report time span is moved via clicking  by ± 12 hours.



8701o08

9.2.10 Zoom a desired area

- Click the corner of the desired selection and hold down the mouse button: The pointer turns into a magnifying glass.
- Move the magnifying glass to the opposite corner of the desired selection and release the mouse button: At the same time, the y-axes are re-scaled.
- Repeat this procedure as needed.



To display the original selection:

- Click again "Zoom" in the "View" menu (the checkmark disappears).

9.3 Design properties

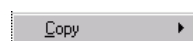
Introduction

Trend provides a number of options to individually adjust the diagram display and to save the adjustments for later use. These options are primarily available in the **Diagram** menu. Open this menu as follows:

-  (*right-click*) the diagram background or
-  (*left-click*) the menu bar.

9.3.1 Basic design options

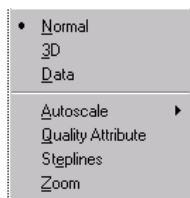
How to use Trend data for other purposes



8701o03a

Yes. When you click this menu item, a drop-down list box with the [Data], [Bitmap], and [Metafile] fields appears. These three fields allow you to copy session or screen data to the clipboard:

Field	Function	Format
Data	Copies all data series of a session to the clipboard.	RTF; compatible with Microsoft Excel
Bitmap	Copies the Trend screen contents to the clipboard.	bmp; Windows bitmap format
Meta File	Copies the window contents to the clipboard.	bmp; Windows metafile format



8701o03b

The options as shown to the left represent the basic set of options to design a Trend window. They allow you to easily and quickly change the basic display properties. Please note the following:

Note:

- Click to switch on the desired option (●).
- Important: Certain options are on/off only!
- Active options are marked with a dot (●).

What is "normal"?

Simply put: You want to view the default display as set by the system (or the default as defined by you). To do this, click **"Normal"** and the normal view appears. Toggle only between 3D and Data!

Everything is two-dimensional. What about 3D?

3D, of course, is possible. Click **"3D"**: All curves as well as the graphics background are displayed in the standard 3D display. To return to 2D, click *Normal*.

Show numbers only

You can do this as well: Click to f **"Values"**. The data series is listed in rows of numbers only. If you prefer a graphical display, click *Normal* or *3D*.

How to adjust the scales to the y-axis

Using **"Autoscale"** and click [Primary Y-Axis] / [Secondary Y-Axis] to turn the function on or off.

The scale of the corresponding axis automatically adapts to changes (e.g. window size) according to the criteria to make it easier to read.

X-axis labeling

Number of visible vertical lines (incl. chart border). This allows for labeling the x-axis at full-hour ticks (one or several hours).

Quality attributes: Active or inactive?

You decide. Click to turn on or off the attribute. When active, values with "bad" QAs are displayed differently.

Step or ramp?

Linking individual points not directly but via step lines (horizontal continuance starting from the old value, vertical jump to the *new* value).

How to view the entire report time span

Click **"Zoom"** to reduce the enlarged data series selection to the standard selection (the entire data series is displayed). Note:

- This option is available *only* to reset the standard selection.
- To enlarge the selection, left-click and specify the selection you want to enlarge.

Where to assign colors



8701o03c

You can assign colors to the following elements:

- x/y-axes caption.
- Graphics background.
- Each curve (data series) in 2D or 3D mode.

Where to assign patterns

You can assign patterns to the following elements:

- Each curve (data series) in 2D or 3D mode.

How to assign both color and/or pattern



8701o09

You can assign both **color** and **pattern** to the following elements as follows:

- Move the mouse pointer to a color or pattern field.
- Permanently click the field to the left.
- Move the mouse pointer (a tilted color bucket) to the desired element and release the left mouse button.

Is there a detailed legend on curves?

Yes, by on **"Legends"**. The bar at the lower bottom of the graphic indicates the following parameters:

- Name of the curve (name of the report data series).
- Assignment of colors to the associated curves.
- Allocation of the y-axis.
- Additional indication of the exact curve value for function "Vertical with time stamp".

9.3.2 Enhanced design properties

Introduction

Use **Chart Properties** and **Font Properties** to design the Trend window's graphic display. You can save and load the properties.

In order to open the associated menus, click "**Diagram**", then click "**Chart Properties**" or "**Font Properties**".

The window provides several tabs to set specific properties. The tabs are briefly described below. You can familiarize yourself with the window by trying out the various functions.



8701o03d

Impact of the changes?



Hint: To check the changes:

- Click "Apply" in the respective tab.

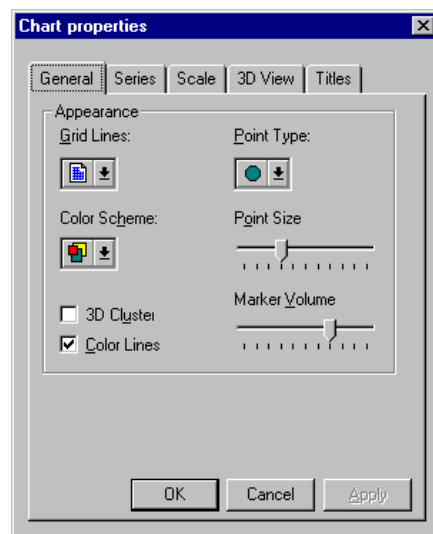
Make changes or not?



Depending on whether you want to execute not yet accepted changes:

- Click "OK" or "Cancel".

Chart properties "General" tab



8701o10: Chart properties, General tab

The "General" tab provides the following general settings:

- Grid Lines
- Color Scheme
- 3D Cluster
- Color Lines
- Point Type
- Point Size
- 3D Line thick

Click "**Diagram**", "**Chart Properties**" and then "**General**" to open this tab.

Grid Lines

"Grid Lines" provides the following variants to display gridlines:

- No lines
- Horizontal lines only.
- Vertical lines only
- Horizontal and vertical lines.

Color Scheme

(3D display only).

"Color Scheme" allows you to assign color and/or texture to the curves.



Note: Both color and pattern type must be assigned to the curves (similar to the graphics range) via the color and pattern bars. Refer to the sections above for procedures.

Color without pattern

Select this field (three colored squares) if you only want to assign colors to the 3D curves. This is especially useful for screen display and quality color prints.

Black/white pattern

If you want to assign a black&white pattern to 3D curves, select this field (black&white pattern). This is especially suited for software printing.

Color pattern

This field allows you to select a combination of patterns and colors for each curve, i.e., you can color the curves using colored patterns. This is especially suited for color printing.

3D Cluster

(3D display only).

Select if you want to display the curves (data series) as clusters on the z-axis (3rd dimension).

Color Lines

(2D display only).

Allows you to specify if the curves are to be displayed by means of the colors defined for the data series or black&white.

Point type, point size

(2D and 3D display).

Use to assign a point to the data acquisition points. The following point types are possible:

- Square
- Circle
- Marble
- Triangle
- Cube
- Variable (other form per series)

The slider allows you to adjust the point size over 11 sizes.



Note: 1 This option is effective only when "Point markers" is selected in the "Series" tab.
2 Point displays are *not well suited* to 3D displays!

Marker Volume

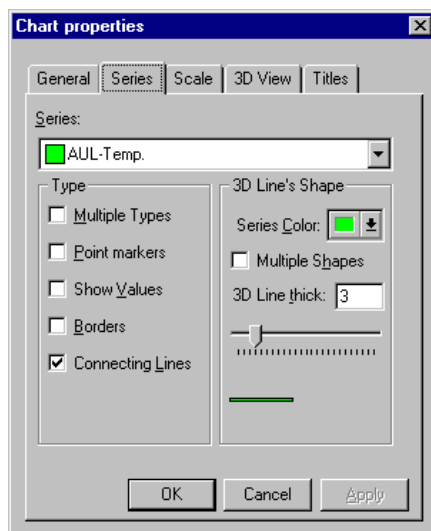
Point display is better suited for 2D black&white printing.

((Only effective in 3D displays if "3D Cluster" is selected).)

This slider allows you to specify the width for the curve bands.

This has no influence on the z-axis depth.

Chart properties "Series" tab



The "Series" tab allows for the following settings:

- Multiple Types
- Point markers
- Show Values
- Borders
- Connecting Lines
- Multiple Shapes
- 3D Line thick

Click "**Diagram**", "**Chart Properties**" and then "**Series**" to open this tab.

8701o11: Chart properties, Series tab

Data series

Select the data series to which you want to apply the data series-specific settings.

Multiple Types

Allows you to specify if the type properties should apply to just the currently selected data series or to all data series in the current report.

Point markers

Allows you to specify if the individual data points should have the point types and sizes as set in the "General" tab.

Show Values

(Meaningful only if "Point markers" is selected).

Allows you to specify if you want to display the value for each point that you display.



Do not use this setting for larger sections (e.g., full view), as individual values may overlap.

Borders

(3D display only).

If you select this option,

- the data series bands, and
- the acquisition times of the data are displayed in a black outline.

Connecting Lines



Use this option to specify if the individual points of a data series are to be connected by lines. Note the following!

Important: You must always select this option to display curves.
If cleared, only individual points are visible (nothing at all after zooming).
If, in addition, "Point markers" is cleared, the Trend display section is blank.

Color

Select the series color to display the previously selected data series.

Multiple Shapes

(3D display only).

Allows you to specify if the 3D line thickness is to apply to all data series or only to the currently selected one.

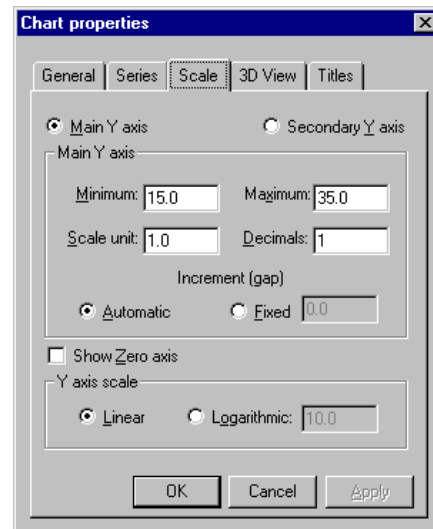
3D line thickness

(3D display only).

The slider allows you to change the width of the curve bands in the 3D display.

Chart properties

"Scale" tab



The "Scale" tab allows you to make the following settings:

- Change allocation to either y-axis 1 or 2.
- Minimum
- Maximum
- Scale unit
- Decimals
- Automatic/Fixed (y-axis calibration)
- Show Zero axis
- Linear/logarithmic (y-axes)

Click "**Diagram**", "**Chart Properties**" and then "**Scale**" to open this tab.

8701o12: Chart properties, Scale tab

Main and secondary Y-axis, X-axis

Allows you to define the y-axis to which the new/changed settings in this tab are to be applied.

Minimum

(Y-axes only).

Enter the smallest value to be displayed in Trend.

Maximum

(Y-axes only).

Enter the greatest value to be displayed in Trend.

Axis factor

It may sometimes be necessary to multiply data series values with a factor to properly display them on the selected y-axis.

This field enables you to enter the factor to be used and indicated in the display.

Decimals

Enter the desired number of decimals (0 - 8).

Automatic/fixed

These two fields allow you to specify if the Y-axis division should appear automatically or should be fixed by applying the scale units to the right.



Note:

- This function *only changes the display (not the range)*.
- We recommend a fixed y-axis setting for printing.

Show Zero axis

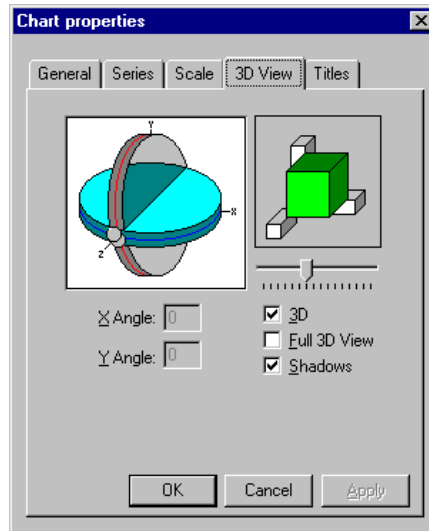
Allows you to specially highlight the zero axis (or the zero axis for 3D displays).

Linear/logarithmic

These fields allow you to specify:

- If the subdivision of the y-axes is to be linear or logarithmic in form.
- The basis of the logarithm.

Chart properties "3D View" tab



8701o13: Chart properties, 3D View tab

The "3D View" tab allows you to make the following settings:

- z-axis depth
- 3D
- Full 3D View
- Shadows

These settings substantially influence the overall display of a diagram/chart. Click **"Diagram"**, **"Chart Properties"** and then **"3D View"** to open this tab.

Z-axis depth

(3D view only).

Adjust the depth of the z-axis by means of the slider (not labeled). When you do this, the width of the curve bands is adjusted in proportion to the z-axis depth.

3D

This setting displays the data series in standard 3D view.

3D Variable

Allows you to display the curve bands in adjustable 3D views. An interactive graphic (blue and red balls) and two fields for manual entry of the x- and y-angles support you in this process.

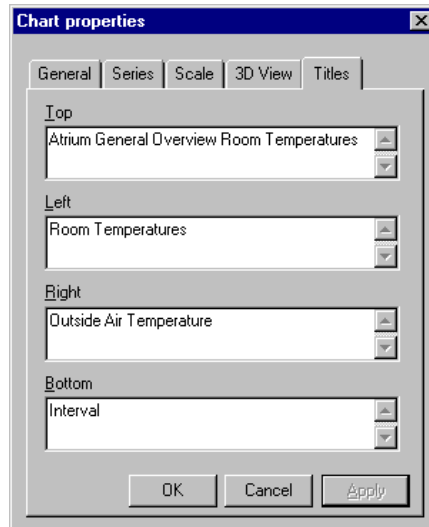


Important: When selected, the *"Show more details on a specific point in time" (vertical line with time stamp)* function is not available.

Shadows

(3D view only) Option to shade the lower side of the curve bands.

Chart properties "Titles" tab



8701o14: Chart properties, Titles tab

The "Titles" tab comprises the following fields:

- Top
- Left
- Right
- Bottom

Enter the texts that are displayed on top, to the left and right, and at the bottom of the graphic in these four fields.

The allocation of titles is different depending on the curve display.

Click **"Diagram"**, **"Chart Properties"** and then **"Titles"** to open this tab.



If the y-axis description and the title caption overlap, select one of the following options depending on the display:

- For 2D and standard 3D displays, adjust the graphics selection (refer to "Change the window size and the graphics selection").
- For full 3D displays, adjust the observation angle (refer to "Full 3D view"; suitable values are $x = 30^\circ$, $y = 300^\circ$).

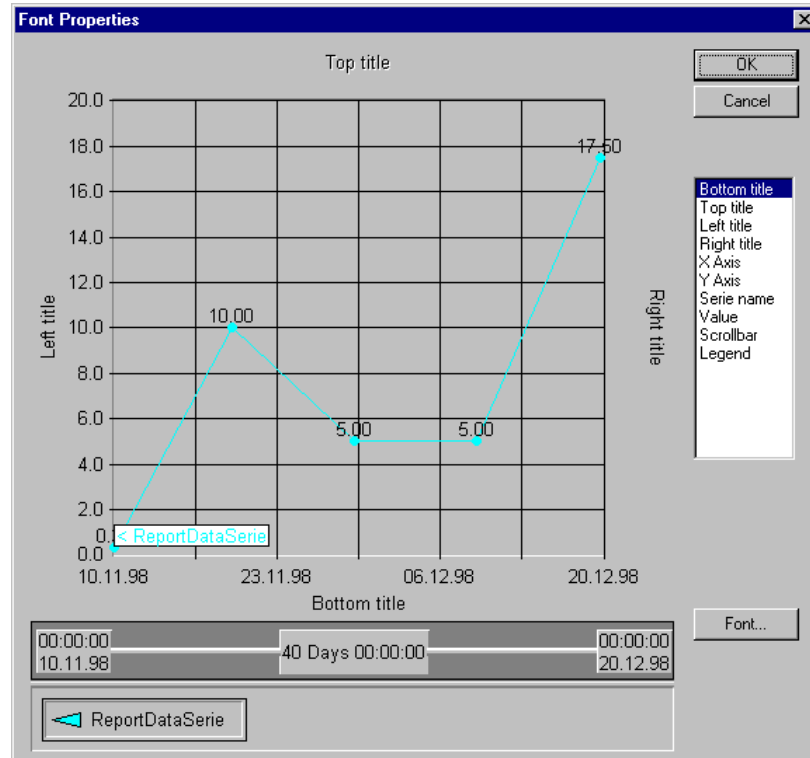
9.3.3 Define the font types



Note: This version of Trend no longer has font restrictions. You can now allocate any font to a Trend report. Save the settings with the report name (refer to "Save a Trend display").

Select "Font Properties" from the "Diagram" menu to open the Font Properties window:

"Font Properties" window





8701o15: Font Properties window

Change fonts

The "Font Properties" window allows you to use any font available on your computer (or server) for Trend.

The field to the right contains all captions whose font types you can change. To change the font of any one of the captions:

- Double-click  the corresponding line **or** select the line, then select "Font"  (the standard Windows dialog box for font types opens).
- Select both font type and size (standard Windows functionality).



Note: Use only TrueType® font types. All other font types may produce unwanted effects in Trend.

9.4 Save Trend design properties

9.4.1 Procedure

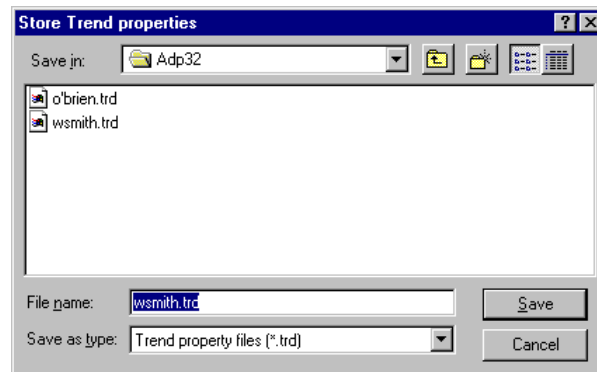
Newly defining the same design properties (multiple use) does not make sense. You can therefore save the design properties as follows:

- Select "Save Properties As" from the Trend "File" menu.
- Select a file name in the "Save Design File" window.



Important:

- 1 All design files must have a .trd extension.
- 2 When naming files, please observe the recommendations located in chapter "Basics on Reports and Design".



8701o16: The *Store Trend Properties* window

9.4.2 Assign saved design properties to a report



You cannot directly reuse a Trend design from the Trend dialog box. The saved design properties must be selected when defining a report by indicating the above created design file.

Refer to chapter "Generate reports/templates" for more detailed information.

10 Excel display (V7.0E/8.0E)



The procedure described in the following sections refers to the external Microsoft Excel spreadsheet program in English, versions 7 (Office 95) and Excel 8 (Office 97).

However, as only experienced Excel users should create macros, we have restricted our instructions to just the most important information. Please refer to your Excel documentation for further information on Excel.

Remember to observe all general notes regarding Excel design in the chapter "Report and design: Basics".

The DEMO database contains various reports for Excel. Use these reports for your work.

10.1 Excel macro and Excel design file

This version (2.x) of ADP uses *three different design macros* as opposed to the earlier user-defined macro (RunMacro):

- ShowMacro
- PrintMacro
- SaveMacro

These macros allow you to create different on-screen and print designs for the same report. Furthermore, you can automatically save the currently generated report.

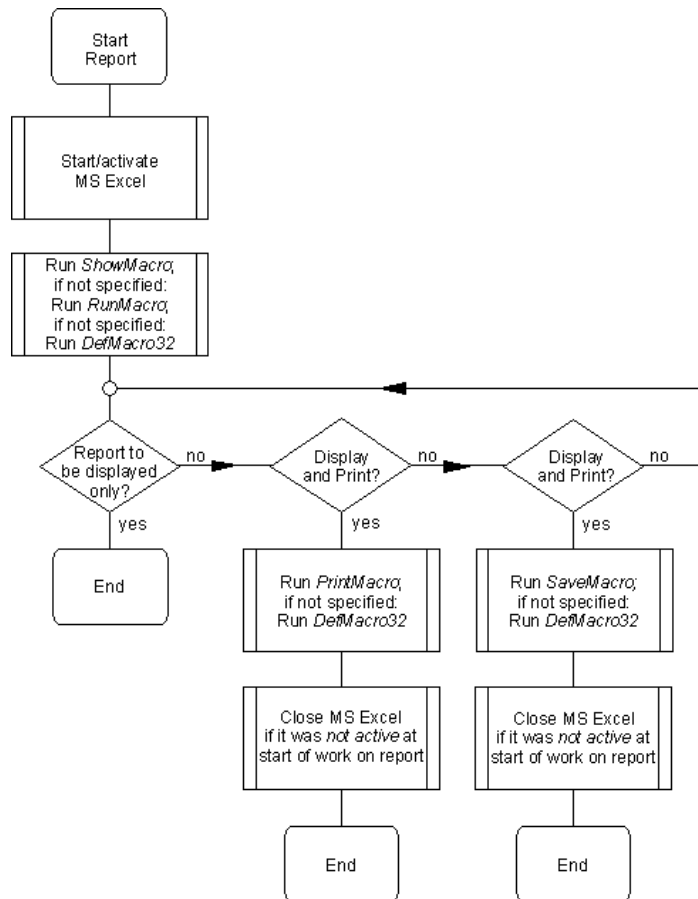
The table below shows the relationship between the three Excel design macros and the program processes:

Macro ¹	Display	Display & Print	Display & Save
	Start/open Microsoft Excel.	Start/open Microsoft Excel.	Start/open Microsoft Excel.
Indicate file (*.xls)	Use <i>ShowMacro</i> of the indicated file.	Use <i>ShowMacro</i> of the indicated file.	Use <i>ShowMacro</i> of the indicated file.
	If not possible: Use <i>RunMacro</i> ² on the indicated file.	If not possible: Use <i>RunMacro</i> ² on the indicated file.	If not possible: Use <i>RunMacro</i> ² on the indicated file.
Not indicated file	If not possible: Use <i>ShowMacro</i> of the <i>DefMacro32.xls</i> ³ standard macro file.	If not possible: Use <i>ShowMacro</i> of the <i>DefMacro32.xls</i> ³ standard macro file.	If not possible: Use <i>ShowMacro</i> of the <i>DefMacro32.xls</i> ³ standard macro file.
		Use <i>PrintMacro</i> of the indicated file.	Use <i>SaveMacro</i> of the indicated file.
Not indicated file		If not possible: Use <i>PrintMacro</i> of the <i>DefMacro32.xls</i> ³ standard macro file.	If not possible: Use <i>SaveMacro</i> of the <i>DefMacro32.xls</i> ³ standard macro file.
	Keep <i>MS Excel</i> open (allows the user to view the report).	Close <i>Microsoft Excel</i> when it was not open prior to starting your work.	Close <i>Microsoft Excel</i> when it was not open prior to starting your work.

¹ Corresponds to the design file from the report properties.

² Macros from ADP version 1.x. These macros will run smoothly, provided they were created on the English version 5.0.

³ If this is not possible (also), an error message appears.



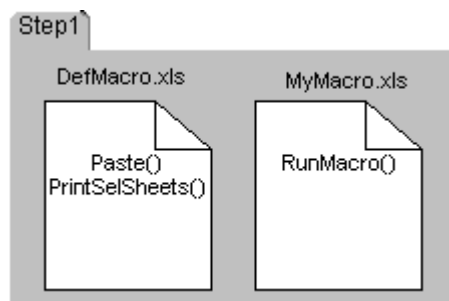
Note

Principally, there are two ways to create your own design file:

- 1 Use the default *DefMacro32*. In this context, use only a copy of *DefMacro32.xls*.
- 2 Use the standard macro *DefMacro32* as the basis (use only a **copy** of *DefMacro32.xls*!). In this case, supplement the parts of the *renamed* copy ("MyMacro") as desired. The program then runs the macros as per the above listing.

8701o22: Excel macro functions of a step 2 design file

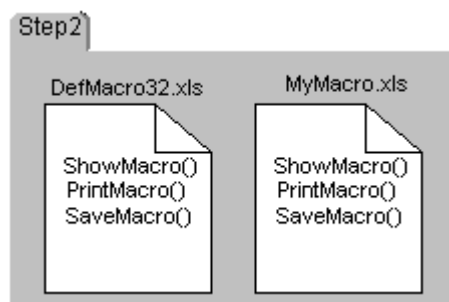
The following graphics illustrate the difference between ADP version 1.x (with ADPView) and version 2.x design file structures:



8701o20: Version 1.x – Macro structure

In version 1.x, the basic macro *DefMacro.xls* contained all steps necessary to generate an Excel worksheet report.

With the aid of your own design file *MyMacro* (any name for the macro), the design processes were controlled by you rather than *DefMacro*: The program attempted to call up the macro named *RunMacro* in your file.



8701o21: Version 2.x – Macro structure

From version 2.x, the basic macro *DefMacro32.xls* contains all steps necessary to generate an Excel worksheet report in three sub-macros.

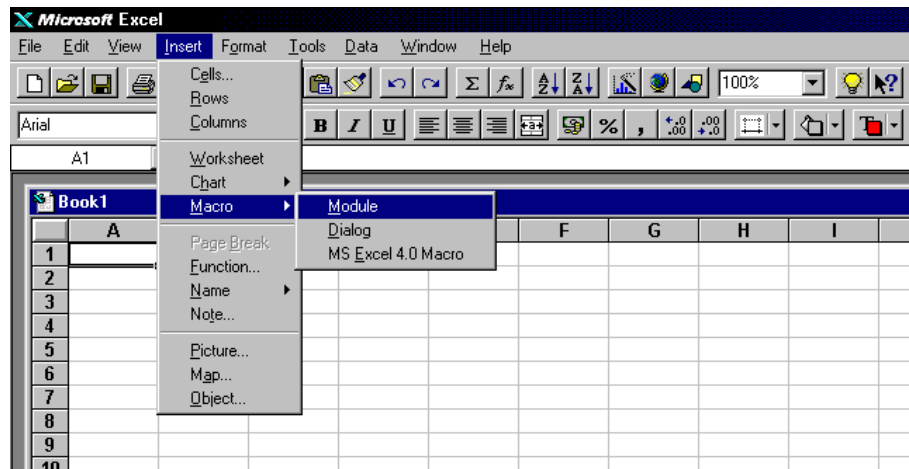
Your own design file *MyMacro* allows you to freely edit the sub-macros. To do this, you can also use specific parts of the *DefMacro32.xls* as well as change other parts in your own design file.

10.2 Create a macro file

MyMacro – step-by-step instructions

Below is a step-by-step description on how to create your own macro "MyMacro"

1. Open a workbook in Excel. Click the menu and menu items as shown below [INSERT-MACRO-VISUAL BASIC MODULE].



8701o24: Insert Macro Module dialog box

2. Specify the macros you want to overwrite (write your own macro for those areas where standard functionality does not cover your requirements).



Hint: Adopt the structure of the following example (copy DefMacro32 as MyMacro). This way, you only need to add your changes.

```
' DefMacro32 (compatible with Excel95 and Excel97)
' =====
' Default Makros for PDM/ADP-Standard functionality
' VO.1 25.11.98 AmU Initial creation
'
' WARNING: You must not edit here !!!
'

Sub ShowMacro()
    Excel.Workbooks.Add
    Excel.ActiveSheet.Paste
    Excel.Columns("A:A").Select
    Excel.Selection.NumberFormat = "m/d/yy h:mm"
    Excel.Range("A1").Select
End Sub

Sub PrintMacro()
    If Excel.Workbooks.Count = 1 Then
        ' There isn't another workbook
        MsgBox "Fatal Error in 'DefMacro32.xls!PrintMacro()': No workbook for printing"
        Exit Sub
    End If
    Excel.Workbooks(Excel.Workbooks.Count - 1).PrintOut From:=1, To:=1, Copies:=1
    Excel.Workbooks(Excel.Workbooks.Count - 1).Close (False)
End Sub

Sub SaveMacro(strFilePathAndName)
    If Excel.Workbooks.Count = 1 Then
        ' There isn't another workbook
        MsgBox "Fatal Error in 'DefMacro32.xls!SaveMacro()': No workbook for saving"
        Exit Sub
    End If
    Excel.Workbooks(Excel.Workbooks.Count - 1).SaveAs FileName:=strFilePathAndName
    Excel.Workbooks(Excel.Workbooks.Count - 1).Close (False)
End Sub
```

8701o25: Design macros for file *DefMacro32.xls*



The shown macro already contains the design properties.

3. Save the workbook containing the macro under the name that was used in the *Edit Report/Template* window in the *Design File* field.

10.3 Create an Excel design file

General procedures to create an Excel design file are similar to the procedures for creating the corresponding files in Formula One.

Design file – step-by-step instructions

1. Create a new *workbook* with at least two worksheets (the *last* worksheet for raw data; the *first* worksheet for graphical implementation).
 2. Save the new workbook under the name referenced by DefMakro32 or MyMacro.
- Open the report with real data or at least simulated data.
 - When opening the report, the data in the Raw Data worksheet looks as follows:



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Excel 5.0 A														
2		Sampling													
3		A10 67 985													
4		GRA \$014042													
5															
6		Recorded													
7		Visonik													
8		-													
9															
10		Atrium tem Qual Attr.													
11	35356	19	0												
12	35356.01	18.9	5												
13	35356.01	18.85	0												
14	35356.02	18.8	0												
15	35356.03	18.7	0												
16	35356.03	18.5	0												
17	35356.04	18.6	0												
18	35356.05	18.6	0												
19	35356.06	18.5	0												
20	35356.06	18.45	0												
21	35356.07	18.45	5												
22	35356.08	18.3	0												
23	35356.08	18.25	0												
24	35356.09	18.3	0												
25	35356.1	18.15	0												
26	35356.1	18.15	5												
27	35356.11	18.2	0												
28	35356.12	18.2	5												
29	35356.13	18.2	5												
30	35356.13	18.2	5												
31	35356.14	18.1	0												
32	35356.15	18.1	0												
33	35356.15	18.05	0												

8701o26: Raw Data tab of the Excel design file

3. Reorganize the data in the new worksheet if necessary.
4. Display them in graphic form on the first worksheet by using the "Chart Wizard".



The fields to be evaluated are transferred similar to the procedure in Formula One:

ChartWizard - Step 1 of 5

If the selected cells do not contain the data you wish to chart, select a new range now.

Include the cells containing row and column labels if you want those labels to appear on the chart.

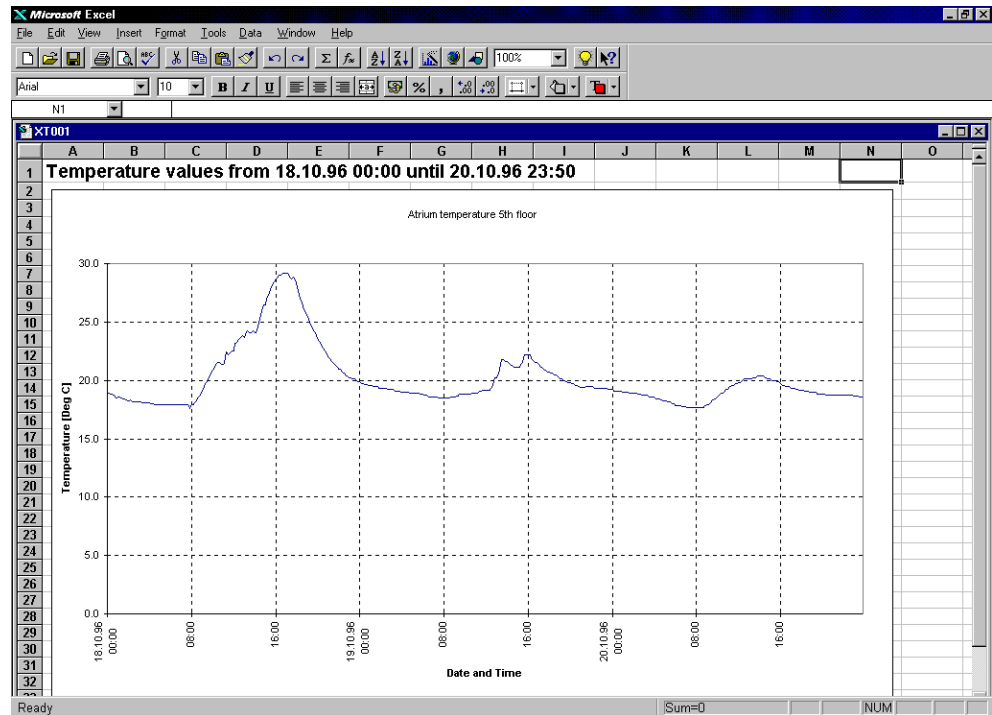
Range:

Buttons: Cancel, < Back, Next >, Finish

8701o27: Excerpt of the sequence *ChartWizard* for the Excel design file

5. Define the design details such as graphic type, labeling, scale, and other general layout characteristics.
6. Select all entries (*but not the formats!*) in the cells of the worksheet containing the raw data and delete them via <Delete>.
7. Save the workbook under the design file name used in the RunMacro. Select the *Excel* folder under *PDM-ADP*.

You can now open the report, which should appear in Excel as follows:



8701o28: *Presentation* tab of the Excel design file

11 Glossary

ADP - Advanced Data Processing

PROGRAM TO EDIT AND PRESENT ANY PROCESS DATA.

ADP as a program primarily focuses on displaying process data in meaningful presentations. Use ADP for the following:

- Define ADP reports.
- Display ADP reports.
- Quickly and easily analyze data.

ADP report.

REPORT BASED ON REFERENCES TO THE DATA SERIES.

The ADP report It does not contain current data, lists, or graphics.

- Assign the data series to the ADP report in the order in which you want to display them on-screen.
- The same data series can appear several times in an ADP report, e.g., with different date ranges.
- A report may also contain data series used for internal calculations in reports only, and not displayed in ADP reports.

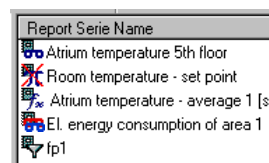
The data series values are retrieved directly from the PDM database each time you retrieve an ADP report.

ADP report template.

ADP REPORT WHOSE DEFINITION IS NOT YET COMPLETE.

The ADP report template contains, contrary to the ADP report, **at least one local filter entry** allowing you to easily locate a specific data series.

When you replace all filter entries of the report template by the desired data series entries, an ADP report template becomes an ADP report.



This means : Local filter.

Use

Report templates are a comfortable means to quickly create new ADP reports with similar designs. As the report template specifies the design, you only need to assign the respective data series.

Resolution

TIME RESOLUTION USED TO DISPLAY DATA IN AN ADP REPORT.

Example

You want a row-by-row display of hourly mean values in an ADP report. In this case, set the "Resolution" to one hour.

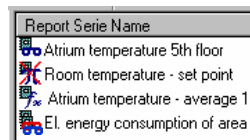
Auto Task

PROGRAM TO AUTOMATE THE FOLLOWING TASKS:

- Upload data from the database.
- Compress PDM data.
- Archive PDM data.
- Start ADP jobs (i.e., print and save ADP reports).

Report data series

DATA SERIES BELONGING TO ADP REPORT, DISPLAYED WHEN THIS ADP REPORT IS OPENED.



Report data series have two additional, report-specific features:

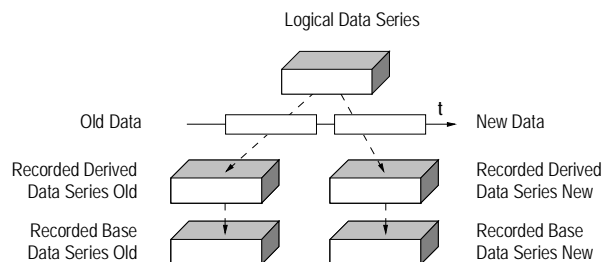
- An offset, i.e., a corrective value that allows for shifting the defined time span (refer to *offset*).
- An option to display the data series in a report or not.

Job

FUNCTIONALITY CONTAINING ONE OR MORE ADP REPORTS AND CAN BE STARTED AUTOMATICALLY OR MANUALLY VIA THE AUTO TASK:

Logical data series

DATA SERIES THAT MERGERS OLD AND NEW RECORDED DATA SERIES AS PER THE MODEL BELOW.



The primary purpose of logical data series is the application of ADP reports. This makes it possible to retain data depiction when migrating to DESIGO.

ADP objects

ADP uses the following objects. For better recognition, they are always displayed together with a symbol.








Referenced data series

	Recorded report data series.	Data series referenced in an ADP report.
	Calculated report data series.	
	Constant report data series.	
	Report data series	This data series is used only for internal calculations in reports and is not visible.
	Invisible report data series.	

ADP objects

(cont.)

ADP reports

	ADP report.	—
	ADP report.	Open.
	Link to ADP report (shortcut).	Short cuts to reports, data points and data series can be created in PDM. These shortcuts are marked by a small arrow similar to Windows.
	ADP report, write-protected:	Access level 5 allows you to save and write-protect ADP reports. However, as soon as you copy a write-protected report, write-protection no longer applies and the standard symbols for ADP reports are again displayed.
	ADP report template.	ADP reports with at least one local filter.
	ADP report template.	Open.
	Local filter	Contains preset search criteria for data series. A local filter, as opposed to a global filter, is valid only within the report template.

Offset

A CORRECTIVE VALUE IS INCLUDED ON DEFINING THE DATE RANGE FOR REPORT DATA DISPLAY. This corrective value can be:

- **Relative** to the start time, e.g., Offset= -2 years.
- **Absolute** for a specific year, e.g., Offset= 1996.
In this case, select "Reference year" as the unit.

PDM database

A DATABASE BASED ON A 'STANDARD RELATIONAL DATABASE SYSTEM'.

For small projects, we recommend an MSDE database, and for large projects, an MS-SQL server database.

The PDM database is a common database and is used by the following programs:

- **ADP** Advanced Data Processing and
- **CC** Consumption Control

PdmExplorer

CENTRAL INTERFACE FOR PDM AND ADP.

PdmFinder

PROGRAM FOR THE TARGETED SEARCH FOR DATA POINTS, DATA SERIES AND ADP REPORTS. You can start the PdmFinder parallel to the PdmExplorer and keep it open in the background to run searches at any time.

Quality attribute

The quality attribute provides information on both generation and reliability of the respective value. An entry may have several quality attributes.

Quality attribute (cont.)PDM sets the following values:

- 0** OK.
- +** Value inserted via the PDM tool "DataEdit".
- !** Value corrected via the PDM tool "DataEdit".
- i** The processed interval contained at least one bad value.
- ^** Value imported from the archive.
- n** Data gap. PDM fills in "0" to eliminate the gap.

VISONIK and DESIGO INSIGHT set the following values:

- 3** Manual entry.
- 4** Limit under/overflow.
- 5** No event.
- 6** Out of service.
- 7** No value available.
- 8** Hardware problem.

Shirtd time

See *Offset*

Period

(also: report time span) Time span in days, weeks, etc. for which you intend to display data in a report.
The report period thus only indicates if the report is a daily, weekly, monthly, or yearly report.

Report time span

CONCRETE TIME SPAN FOR WHICH YOU TO DISPLAY DATA IN THE REPORT.
Derived from the concrete time span for which the report displays data results from the time span (report time span), the offset,, the present report start date, and the set job properties (e.g. first weekday=Monday).

Time stamp

ATTRIBUTE TIME FOR AN ENTRY IN A DATA SERIES.
Each entry of a data series has a time stamp showing the time when the value was valid.
The time stamp supplies the date and—depending on the interval—the exact hour for each value.

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